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ABSTRACT

This volume contains the sixteen papers presented to the 1968, 1969, and 1970 annual meetings of the North Central Reading Association. The papers are grouped into four sections: Programs and Centers, Materials and Techniques, Evaluation, and Professional Problems. Some of the topics concern tests and test-taking, attitudinal factors, descriptions of college and industrial reading programs, teacher preparation, grouping techniques, behavior modification, and material evaluation. A single paper on SQ3R completes the volume. (TO)

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COLLEGE and ADULT READING

VI

THE
SIXTH YEARBOOK
OF THE
NORTH CENTRAL READING ASSOCIATION

Edited by
DAVID M. WARK

Student Counseling Bureau
University of Minnesota

1971

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PREFACE

This is the sixth in a series of five volumes, euphemistically called yearbooks. The North Central Reading Association is a small, rather intimate professional group. Meeting as they do once a year for a day and a half, the members don't generate a huge volume of publishable papers. Thus it takes several years to accumulate enough material for one "yearbook."

The papers in this volume span, as has been the North Central Reading Association's usual practice, a three year period. Presented here you will find papers from the 1968 meeting, at Ohio State University chaired by Phil Clark, the 1969 meeting at the General Motors Institute chaired by Harry Patterson, and the most recent meeting, 1970 at Valparaiso University arranged by Richard Kroenke. They of course are not responsible for any errors that I inadvertently allowed to slip into this volume. And of course, to the authors who have published, my deepest thanks for their competence and patience. It is indeed frustrating to submit a paper to an editor and wait and wait and wait and wait and ....

There is one person whose competence and patience must be recognized. This volume would not exist at this point in time without both those qualities, in great measure, demonstrated by Gayle Rainey. On your behalf, dear reader, to her I extend a thank you.

D.M.W.

READING IMPROVEMENT IN A LARGE URBAN UNIVERSITY

Roger S. Pepper
Wayne State University

The role of the reading improvement program in the large urban university which I represent has changed markedly over the years. It started with the limited goal of improving the visual efficiency, and hence reading speed, of the average or better college reader. Today its task involves not only service to a much larger and more heterogeneous university population but also participation in programs reflecting the university's increased concern with the problems of the urban community, especially those relating to the culturally and economically disadvantaged.

The purpose of this paper is to describe the development of our program as it related to this dual function of service to university students and to the needs of a complex urban society.

Development of the Program

The Wayne State University reading improvement program started with the concern of a Detroit opthalmologist over the number of college students among his clientele. In 1940, at the suggestion of Dr. Ralph Pino, Mrs. Greta Hultin DeLong, an orthoptic technician on his staff, conducted a survey entitled "Reading Load at Wayne University with Attention to Amount of Visual Fatigue." The conclusions drawn from this survey indicated that only one-fourth of the Wayne students selected at random

were efficient readers. Approximately one-half were handicapped in their studying by poor reading habits, and most of the students had visual difficulties only when reading or doing similar class work.

This survey of their reading habits aroused student interest in the possibility of improving their skill. In the spring of 1941, in response to student requests, Mrs. DeLong organized several reading courses on a purely voluntary, non-credit basis. The program was supported financially by Dr. Pino. The enthusiastic response of students and interested faculty to these initial courses led the University to assume responsibility for the program the following year. It was placed under the supervision of the English Department of the College of Liberal Arts and a university wide advisory committee appointed by the president. It was transferred to the Division of Student Personnel in 1946, and officially entitled the Department of Reading Efficiency and Study Skills. Our classes for regular students are listed each quarter in the University Schedule of Classes. They are open to any student currently enrolled in the university regardless of class standing and college or school affiliation. Although no credit is given and no fees are assessed, students follow the normal registration procedures to enroll in these classes.

Initially, the sponsors emphasized the voluntary, non-credit, non-remedial nature of the program. The classes were offered for the average or better reader

with no provisions for individual diagnosis or instruction. The focus of training was on the development of more efficient visual skills. Class exercises were designed to develop smooth or rhythmic eye movement patterns. Students practiced shifting their eye fixations across and down a page of x's to the beat of a metronome. The tachistoscope was employed to increase speed and span of perception. The Harvard Reading Films were used to develop rhythmic eye patterns in reading connected phrases in a complete article. To transfer this training to normal reading and to provide a measure of progress, each class included a timed rate-comprehension text exercise.

Evaluations of the program at that time indicate that these techniques did increase rate without loss in comprehension for large numbers of students. It soon became apparent, however, that this limited approach did not meet the varied needs of a heterogeneous university population. Separate classes in study skills were added in 1943 and vocabulary development in 1948. In addition, the staff gradually became more and more involved in individual counseling. After a few years' experience with these separate courses as well as various combinations of them, it was concluded that a single course which included all aspects of the program was most effective. Thus, in 1953, a combined reading efficiency, study skills, and vocabulary course became the basic offering of the Department. At the same time, the increase in individual counseling led to the establishment of a reading laboratory to handle students with special problems.

This arrangement continues today as the general format of our program for regular students.

Although the organizational structure of the program has remained fairly stable, the growth of the university has increased the range of individual differences among our clientele. We not only have more freshmen, we also have more transfer students, more graduate students in a wider variety of specialities, more professional schools and more foreign students. The students now enrolled in our program reflect this diversity and, in addition, range in age from 15 to 57 years.

Fortunately, flexibility and experimentation have always been characteristic of the program. We have employed a wide variety of techniques, materials, mechanical devices, and class patterns. For example, we have moved from the original heavy emphasis on hardware through a period of no mechanical aids to our present selective use of these instruments.

The Current Group Program

Currently the program operates in the following manner. Sections of our basic course are offered each hour of the day on Monday, Wednesday, and Friday for six weeks and on Tuesday and Thursday for nine weeks. Enrollment is limited to twenty per class. Since students select their own class, the major common element in each group is that they had that particular hour available in their schedules.

The first two periods include a discussion of the purpose of the program and the administration of the Survey Section, Diagnostic Reading Tests, and the Brown-Holtzman Survey of Study Habits and Attitudes. On the basis of this preliminary information, those students for whom the class appears inappropriate are invited to switch to the reading laboratory. In general, these would be graduate students, foreign students, those with some specific reading or study problem, and those who have previously taken the course.

The goal of the basic course is to assist students to develop the necessary skills and attitudes for dealing with the wide range of college studies. The main areas stressed are flexibility in rate, study type reading, vocabulary development, and efficient study techniques. These are developed through discussion and a variety of exercises. Several college level workbooks and numerous mimeographed lessons are employed. Although the tachistoscope or a reading film may be used occasionally to illustrate a specific point, they are not a standard ingredient in this group situation. On occasion the classes may be divided into two or three smaller sections in order to deal more directly with different levels of ability or the special problems of specific subgroups of students.

The Reading Laboratory

The students in the Reading Laboratory, in addition to those drawn from our regular classes, include self or faculty referrals with special problems, graduate students, foreign students, and those

who have completed the basic course but wish additional training. The Lab program is very flexible and individualized. Depending upon his stated objectives in entering the program, the student may receive diagnostic testing, counseling, remedial work, or developmental training in a specific skill.

In order to provide maximum service within the constraints of staff time and the facilities available, we have developed a series of semi-self-instructional programs. Initially, each student has a conference with the lab instructor during which his individual training objectives are established and a schedule arranged. He receives a folder which includes the sequence of exercises he is to pursue and a space to record his daily performance. The instructor checks his daily progress and makes changes in the program when necessary. Although much of the program can be completed independently, the instructor may work directly with an individual or small group on some specific problems. Through this approach we are able to have one instructor give individualized instruction within one lab class in such diverse areas as rate, vocabulary development, identifying main ideas, and study skills.

The equipment and materials available in the reading lab include: a tape recorder, EDL Listen and Read Tapes, SRA Reading Accelerators, EDL Tach X, the Controlled Reader, the Harvard Reading Films, the C-B Phrase Reading Films, a variety of college reading and study skills manuals, mimeographed exercises, and programmed materials.

Roger S. Pepper

Evaluation of the Student Program

As we gain experience with this multi-media approach to individual needs in the laboratory setting, we are also experimenting with this technique in our classes. We are modifying the more impersonal group instructional methods to give greater attention to individual differences in ability, skill and need. A recent survey of student opinions indicates that we are making progress in this direction but are still short of our goal.

We find that these student evaluations, although sometimes uncomfortably realistic, are a valuable adjunct to those made by the staff. Let me cite a few examples. We agree, of course, with the majority of students who reported the course as helpful and appropriate in content but inadequate in length. When asked to rate the course in terms of their expectations, 6% said inadequate, 71% adequate, and 23% highly adequate. The latter figure, when viewed as an indication of the general effectiveness of the course, is disappointing. The most interesting and puzzling responses, however, were those made to a series of questions regarding the effectiveness of several of the specific methods and techniques taught in the course. The numbers indicating that they had not even tried to use a particular method ranged from 17 to 45 per cent. Findings such as these serve to keep us modest in our own evaluations and aware of the potential for better service to our students.

The program which I have just described is not unique to the urban university. Indeed, we have borrowed freely from the experiences of others in the college reading field in our efforts to make it more effective.

Community Programs

I would like to turn now to our community service function for it is in this area that we depart from the traditional role of a university oriented program.

Wayne has offered courses for non-students for many years. These have included adult education classes, a special summer program for college bound high school seniors and recent graduates, and numerous classes for business and industry. Classes have been conducted for lawyers, engineers, management personnel, scientists, purchasing agents, and bankers. For the most part, these have been developmental in nature, designed for average or better readers and offered on a voluntary basis. Thus, as with our regular students, we encounter few serious reading disabilities. In general, the individuals in these groups are highly motivated with good potential for improvement. Perhaps we should label them, as a point of reference, the "culturally advantaged" for they come from the segments of our society that have traditionally had the greatest access to the services of the university. I mention them here to indicate that this area, too, is an important part of the urban university community. Since these classes are fairly typical of those offered by many colleges and universities, however, I will not

elaborate on them further at this time. Instead, I would rather take the balance of my time to discuss some of our more recent involvement in programs for those people who previously had the least access to the facilities of the university.

In response to the growing national awareness of the gross inequities within our society, Wayne has given high priority to programs related to the most critical of our urban problems. This concern is directed primarily toward the inner city and includes such diverse areas as urban planning, medical care, housing, and, of course, education.

With this increased involvement of the university in the community, the reading program has been called upon to serve a much more complex population of reading abilities. A listing of the major special programs with which we are working will illustrate this point.

1. Summer Institute Council on Legal Education Opportunity

The purpose of this program is to assist minority group college graduates who need help in meeting traditional law school admission standards. A reading improvement course was compulsory for all students. In addition, they were enrolled in three basic law courses.

2. Mayor's Committee on Human Resources Development

Classes were provided for the supervisory personnel and for counselor aides. The latter class was part of a job upgrading program for disadvantaged people. One purpose of the reading

course was to improve their ability to deal with civil service examinations.

3. Upward-Bound

This program operates throughout the year to assist high school youngsters to develop the skills and motivation necessary to continue their education. During the summer they are on campus full-time for a wide range of educational, cultural, and recreational experiences. On the basis of academic performance and reading test scores, those judged to have deficiencies were assigned to a reading and study skills class. Others were permitted to take the course voluntarily.

4. Labor School

This school is operated by the Institute of Labor and Industrial Relations. It is a two year program for working people who wish to broaden their general educational background. Entrance into the program is voluntary, but reading improvement is one of the required courses. Other courses include Science Today, the Development of Industrial America, American Society, Effective Writing, and Literature. The school provides a liberal arts orientation for individuals who, in general, do not perceive themselves as "fitting into" the traditional adult education or extension program.

5. Marginal Students

The final special project which I would like to discuss deals with high school graduates who do not meet the

academic requirements for admission to the university. The first group of these marginal students was selected from the typical group of applicants who fell just below admissability. In general, their overall high school grade average was between 2.4-2.75, with SAT scores in the 700-800 range. Non-intellective factors were also considered.

This program started with the 1968 Summer Quarter. The students were required to take freshmen English and one other credit course as well as a non-credit reading and study skills class. Special counseling services and remedial English were also made available. Beginning with the Fall Quarter, they followed a regular college class schedule. It was stipulated that they would not be excluded from the university for academic reasons for one full year.

A second group was admitted to this program during the 1969 Summer session. These students, although similar to the first group with respect to their marginal academic credentials, were recruited primarily from high schools in disadvantaged areas as designated under the National Defense Student Loan Act. Most of them would not have applied for admission to the university on their own initiative. They were recruited through the combined efforts of the university, the high schools, and a citizen's committee.

The first group of these marginal students has now completed one year of college. Of the 198 students who completed the reading class during the Summer of 1968, 155 were still enrolled in the university

at the end of the Spring Quarter, 1969. Their honor point averages, on a 4 point scale, ranged from .57 to 3.36 with a mean of 2.02. After one full year of college work, 52.3% have achieved a "C" average or better.

Evaluation of the Special Programs

Pending the completion of a more thorough analysis of the data we have collected on these special programs, I would like to conclude with a few observations. Although their scores on standardized reading tests covered a wide range, the majority were below average on the norms for their respective educational levels. Within each group, including the college graduates in the law program, there were some individuals with serious reading handicaps. Inadequate vocabulary was the most frequent specific skill deficit.

Wide differences in interest and motivation were also apparent. A significant number felt that grades did not reflect their real ability and tended to blame teachers for their failures. The mean class scores on the Brown-Holtzman Survey of Study Habits and Attitudes were generally below average.

Our experience indicates that a single course does not permit adequate flexibility or time for maximum effectiveness in dealing with this range of abilities--especially the most serious deficiencies. And finally, the traditional materials and instructional methods were inadequate. Instructors must become much more flexible in their techniques and develop exercises with content relevant to the interest and experiences of these special students.

Roger S. Pepper

Summary

The growing awareness of and concern for the educational problems of the culturally disadvantaged has produced substantial changes in the services provided by the reading improvement program in a large urban university. The original program was designed to serve college students and that segment of the community which has traditionally been served by the university's adult education programs. The current trend is toward the development of a variety of special programs to meet the specific educational needs of the people in the inner city.

A COMPARATIVE STUDY OF READING IMPROVEMENT PROGRAMS IN INDUSTRY AND EDUCATION IN THE UNITED STATES AND CANADA

Allen Berger[1]
The University of Alberta

In preparation for an address entitled "Speed Reading: Is the Present Emphasis Desirable?" (Berger, 1969), a questionnaire was composed to determine the existing situation regarding programs designed to increase the reading rate. In the United States, the questionnaire was mailed to 225 commercial reading firms, whose addresses were obtained from the yellow pages of telephone directories of different parts of the U.S.; 372 college and university reading centers, as listed in the Lambuth College Directory (Helms, 1967); and 500 top corporations as listed in Fortune (June, 1967).

The same questionnaire was mailed the following year in Canada to 25 commercial reading firms, 70 colleges and universities, and 150 top corporations.

Of the 1,088 questionnaires mailed in January, 1968, in the United States, 292 or 27 per cent, responses were received; these included completed or partially completed questionnaires and letters from 45 states and the District of Columbia. Responses came from 53 or 11 per cent of the corporations;[2] 48 or 21 per cent of the commercial reading firms; and 191 or 53 per cent of the college and university reading centers.

Allen Berger

Of the 245 questionnaires mailed in April, 1969 in Canada, 83 or 33.9 per cent responses were received. The breakdown was 39 or 26 per cent of the corporations replied; 8 or 32 per cent of the commercial reading firms; and 36 or 51.4 per cent of the colleges and universities.

Because only a small portion of the data has been presented, the purpose of this paper is to record the data obtained from the questionnaire survey so that one may become familiar with the current status of reading improvement programs in the United States and Canada.

The following questions and tables contain the essence of the questionnaire results.

Do These Courses Have Any Philosophy?

Various statements concerning philosophy of reading were included with returned questionnaires. Many of these statements were somewhat general (e.g., "reaching potential of students," etc.). Nevertheless, of the 203 U.S. responses and 36 Canadian responses to the statement, "we have a basic philosophy," respectively, 180 or 89 per cent, and 26 or 72.2 per cent, replied affirmatively. Table 1 indicates that commercial reading firms and colleges and universities in the U.S. and Canada tend to have philosophies.

How is "Speed Reading" Defined?

The questionnaire contained the following statement to be completed: "A definition of speed reading that most clearly fits

TABLE 1

Philosophy of Reading

	United States		Canada	
	Number		Number	
	Yes	No	Yes	No
Corp.	9	8	2	4
Firms	36	2	10	1
Colleges	135	13	14	5

the objectives of our program is:". A multiplicity of responses was received, as indicated in Table 2. (The first five responses were listed on the questionnaire; the others were written in by the respondents) As indicated, corporations, firms and universities in U.S. and Canada prefer "efficiency of reading."

Who Takes the Reading Improvement Courses?

In the U.S., the corporations tend to have a greater percentage of college educated adults, whereas in Canada they tend to have a greater percentage of high school graduates. Regarding the commercial reading firms, college educated adults are the largest "market" in both countries.

Of particular interest here is that a greater percentage of Canadian college students than U.S. college students take commercial reading courses; this

TABLE 2

Definition of Speed Reading

	Corp.		Firms		Colleges	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Increasing: Rate	0	0	1	2	3	3
Flexibility	1	2	2	3	17	6
Efficiency	5	4	21	7	49	16
Rate of comprehension	1	2	4	3	25	3
All of above	2		7	0	11	
Other	9	0	12	4	54	2

pattern is also true among businessmen and professional people. One interpretation is that few Canadian colleges and universities have reading improvement programs. This interpretation is substantiated by the data indicating that in neither country do colleges and universities seem to service the reading needs of the general public including professional and businessmen. (See Table 3)

How Large are the Classes?

Table 4 reveals the range and median class size of reading improvement programs in the U.S. and Canada.

What is the Total Number of Hours Spent in Classroom Instruction During the Whole Course?

The corporations in the U.S. and Canada tend to have a similar median number of classroom hours of instruction. The commercial reading firms in the U.S., however, have a higher median hours of instruction than do those in Canada, and the colleges and universities in the U.S. have a considerably higher median hours of instruction than do those in Canada. (See Table 5)

What Kinds of Materials and Equipment are Used?

A wide array of materials is used; respondents mentioned records, tapes, films, filmstrips, transparencies, overhead projectors, reading kits, accelerators, tests, tachistoscopes, workbooks, charts, maps, games, books, multi-sensory materials, manuals, and experience reports.

TABLE 3

Who Takes the Reading Improvement Courses?

	Corp.		Firms		Colleges	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Elementary school children			5	1	18	0
High school students	1		26	7	60	4
High school graduates	10	6	18	6	51	4
College educated adults	12	4	25	9	72	12
College students	0		5	4	75	7
College graduates	11	4	22	7	41	7
All of the above	0		9	3	5	1
Businessmen, executives and professionals	0		4	4	2	
Other	6		1		0	

TABLE 4

Class Size

	Range of Class Size		Median Class Size	
	U.S.	Can.	U.S.	Can.
Corp.	1-25	1-25	20	14
Firms	1-30	12-30	10	24
Colleges	1-100	10-150	16	26

Table 5

Hours Spent in
Classroom Instruction

	Range of Class Hours		Median Class Hours	
	U.S.	Can.	U.S.	Can.
Corp.	6-48	4-40	20	18
Firms	10-100	2-30	24	19
Colleges	5-140	2-30	30	11

Machines are widely used. Some respondents, however, specified restrictions for such use; e.g., "during first three weeks," or "first twenty minutes of class

time."

Table 6 indicates that the tachistoscope is the favorite for group instruction in the U.S. and Canadian corporations, whereas, for individuals, controlled pacers are favored. Commercial reading firms and colleges and universities have a similar pattern as the corporations, with commercial firms making increased use of textbooks.

Who Teaches the Course?

Table 7 reveals that 21 Ph.D. degree holders are actively involved in teaching these courses in the U.S. (mostly in universities).

Is Vision Checked?

Routine vision checks are reported in 94 programs in the U.S., and six noted that vision is checked when requested by student, parent or teacher. Five commercial firms in the U.S. recommend a private eye examination for all students; one requires proof of a recent examination.

Approximately twice the percentage of U.S. commercial reading firms and colleges and universities have vision checks in comparison to the percentages in Canada. (See Tables 8 & 9)

Is There Any Pre-Testing of Reading Skills?

Pre-testing is reported by the majority of those responding in the U.S. and Canada. Over 90 different ways were mentioned. Tests indicated as most

TABLE 6

Materials and Equipment Usage

	Corp.				Firms			
	Groups		Individual		Groups		Individual	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Tachistoscope	11	2	3	0	15	4	22	2
Pacing machine	8	2	8	3	12	2	23	2
Scanning paperbacks	3	1	6	0	10	5	13	4
Films	7	1	1	0	9	3	5	1
Textbooks	3	3	6	1	15	5	24	6
Other materials and equipment (Group and Individual)	8	1			39	7		

TABLE 6(Cont.)

Materials and Equipment Usage

	Colleges			
	Groups		Individual	
	U.S. No.	Can. No.	U.S. No.	Can. No.
Tachistoscope	86	10	87	7
Pacing machine	64	8	122	12
Scanning paperbacks	31	7	55	4
Films	64	3	32	1
Textbooks	82	7	97	9
Other materials and equipment (Group and Individual)	100	10		

TABLE 7

Educational Background of Instructors

	Corp.		Firms		Colleges	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
College educated	5	4	7	4	23	1
College graduates	5		28	7	57	6
M.A. other than reading	6		23	3	64	9
M.A. in reading	3		21	1	87	2
Ph.D. other than reading	0		2		8	
Ph.D. in reading	0		2		9	
Special training	3		23	2	0	0
Specialist's certificate in reading	0		1		0	
Six-year specialist diploma	0		0		1	

TABLE 8

Number Who Give Vision Checks

	U.S.		Can.			
	Yes	No	Yes	No	Recommend Private Checks	Special Cases or on Request
Corp.	1	17	0	6	0	0
Firms	15	20	2	6	5	1
Colleges	78	74	4	15	9	9

TABLE 9

Kinds of Vision Checks Used

	Keystone Telebinocular		Bausch and Lomb Orthorater		EDL Reading Eye		Combination of Tests		Others	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.	No.	No.
Corp.	0		0		0		1		0	
Firms	6		2		0		0		6	2
Colleges	48	1	6	2	4		7		9	2

Note: Totals of test used do not total the same figures used in Table 8 because some respondents replied affirmatively to the question but declined to name the test used.

popular were The Nelson-Denny Reading Test, the Cooperative English Tests, EDL Reading Versatility Tests, and various forms of the Iowa Silent Reading Test, Science Research Associates (SRA) Tests, Gates Reading Survey, and teacher-made tests, including informal reading inventories.

Table 10 indicates that more than 90 per cent of the commercial reading firms and colleges and universities in the U.S. and Canada give pre-tests. Regarding corporations, 73.8% in the U.S. and 100% in Canada have pre-tests in their programs.

What is Done in the Last Session?

There appears to be a greater variety of things occurring at the last session of reading improvement courses in corporations, commercial firms, and colleges and universities in the U.S. Table 11 contains these data.

What Are the Rate Goals?

Respondents were asked to complete the following statement: "The reading rate that we have as a goal for our students is:" Specific rates mentioned ranged from a minimum of 25 wpm to a maximum of 18,000 wpm. The median of the minimum was 600; the median of the maximum, 900. Many respondents chose to qualify the above rates by specifying the types of material for which a particular speed was intended, such as 600-900 wpm for newspapers, or popular magazines; 300 wpm for textbooks. Others stated a rate and added "for skimming only." Many chose not to set

TABLE 10

Number Who Give a Reading Pre-Test

	U.S.			Can.		
	Yes	No	Sometimes	Yes	No	Sometimes
Corp.	14	5	0	6	0	0
Firms	42	1	0	9	1	0
Colleges	154	6	1	18	1	0

TABLE 11

Course Content of Last Class Meeting

	Corp.		Firms		Colleges	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Post-testing	4	5	13	8	17	11
Discussion of post-testing results	2	3	11	8	10	6
Suggestions for continuations on own	1	3	16	9	21	13
All of above	8		16		41	
Post-testing and discussion of results	0		0		13	
Discussion of post-testing results and suggestions for continuation on own	0		0		34	
Post-testing and suggestions for continuation on own	0		0		17	
Other	4		7	3	11	5

a specific numerical rate; 29 respondents preferred an individualized rate. Some specified that basic reading skills must have reached an acceptable level before there could be any stress on rate. Many preferred to state the rate goal in terms of doubling or tripling the starting rate while some stated the aim was only for improvement of rate. Further qualification came from those who stressed that speed is variable and must be adjusted to individual skills, material, and purpose. In Canada, goals in corporations and colleges and universities did not exceed, respectively, 900 and 1500 wpm. The goal was 5,000 words per minute for one commercial reading firm in Canada.

Are These Gains Maintained after Student Has Left the Class?

Generally, respondents indicated that gains are maintained. They cited follow-up studies, post-testing months after course completion, or conferences with students, parents, or teachers.

TABLE 12

Retention of Gains in Reading Rates

	Yes		Sometimes		Usually	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Corp.	10	4	2		0	
Firms	35	10	2		1	
Colleges	91	12	3		5	

TABLE 12(Cont.)

Retention of Gains in Reading Rates

	Do Not Know		Not at Peak		No		Generally Not	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Corp.	5		0		1	1	0	
Firms	3		0		2	0	0	
Colleges	31		12		6	2	1	

How Is Rate Measured?

Most respondents measured rate by "number of words per minute" while some used "number of words dealt with per minute." The Effective Rate, which is referred to as the Reading Index by the Educational Development Laboratories (EDL) and others, is also used. Other ways indicated by individual respondents included "number of pages read in a given time," "percentile on the Iowa Test," "percentile on the Cooperative Test," "time to read a given chapter," "time to read an entire book," "reduction of time spent on reading," "maintenance of comprehension at an 80 per cent level or speed is not stressed," and the use of "gross and effective rates." A few said they did not measure rate. No respondent mentioned measuring rate by number of syllables. Table 13 provides information on rate measurement.

What Are the Comprehension Goals?

Respondents generally expressed concern for adequate comprehension. The majority of programs in the U.S. and Canadian corporations, commercial reading firms, and colleges and universities aim for 70-90 per cent comprehension.

Some respondents indicated that comprehension varies with individuals, materials, and purpose. Ways of measuring comprehension included quizzes, standardized tests, teacher-made tests, group discussions, outlines, summaries, and major ideas. (See Table 14)

TABLE 13

Methods of Measuring Rate

	Corp.		Firms		Colleges	
	U.S. No.	Can. No.	U.S. No.	Can. No.	U.S. No.	Can. No.
Number of words per minute	17	6	34	8	140	16
Number of words dealt with per minute	0	1	3	2	16	1
Number of syllables	0		0		0	
Other	0		4	5	5	1

TABLE 14

Comprehension Goals

Per Cent of Comprehension	Corp.		Firms		Colleges	
	U.S.	Can.	U.S.	Can.	U.S.	Can.
50-69	1		4		9	2
70-79	7	1	11	7	63	8
80-89	2	2	14	1	42	6
90-100	2	1	4	1	16	3
65-100	3		4		17	
Strive for individual improvement	3		1		1	
Comprehension goals vary	0		1		2	

Is Any Relationship Made to Study Skills?

More emphasis is placed on study skills in reading improvement programs in Canadian corporations, about the same emphasis is given in commercial reading firms in both the U.S. and Canada, and more emphasis is given in U.S. colleges and universities, as indicated in Table 15.

TABLE 15

Study Skill Relationship

	U.S.		Can.	
	Yes	No	Yes	No
Corp.	12	5	5	1
Firms	42	1	9	
Colleges	153	4	16	3

Conclusion

The findings of this survey are in line with those obtained in the survey made by Geerlofs and Kling (1968). It is encouraging to observe certain practices. One is the use of the vision check. Another is the use of more formal testing procedures before and after instruction. A third practice that is encouraging relates to the cooperation extended by corporations, commercial reading firms, and colleges and universities in providing information about their programs for this study. Cooperation of this nature will lead to

increased communication and through communication there will come a clearer understanding of the problems and the realization of their solutions.

One area of neglect revealed by this survey concerns the general public. Relatively few colleges and universities provide a reading improvement service for adults. This relative lack of service may in part reflect the current emphasis upon research and training in many institutions of higher education, contributing, perhaps, to the separation between "town and gown" in many cities.

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Footnotes

1. Appreciation is extended to Drs. Margaret Keyser Hill, H. Alan Robinson, and Nila Banton Smith for their suggestions in regard to the questionnaire used in this study; to Dr. Marion D. Jenkinson for comments after reading the original manuscript; and to Mrs. Kathleen Nelson, Miss Linda Williamson, and Mrs. Sharon Dickscon, for their help with the data.

2. Respondents from many corporations noted that they refer employees to commercial reading firms, or to colleges and universities, instead of staffing a reading program.

THE 4 T'S: A COMBINATION OF GROUP AND INDIVIDUAL APPROACHES TO TEACHING A "HOW TO STUDY" COURSE

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The "How to Study" course described here is a combination of two traditional approaches to helping students study more efficiently: (1) dissemination of study techniques information through group presentation and discussion and (2) individual skills development.

Four major units, dubbed the 4 T's, comprise the content of the course:

T = Text
T = Talk
T = Test
T = Teacher

Each of the four units is divided into group and individual work. Systematic application of study techniques to practice of reading rate at home serves to bring together what is taught in the group and practiced individually in the laboratory.

In this paper, a brief overview of the basic framework of the suggested integration is presented. Then each of the 4 T's plus the formula which combining them provides, is discussed in some detail. For each, suggestions for topic presentations to a group are given followed by options for individual practice. Finally the reading rate assignment is described and several examples of individual records cited.

Sue Johnson

The Basic Framework

Classroom activities are divided into two parts. The first part is devoted to lectures and discussions on a common topic. Topics are essentially those used in any "How to Study" course: listening and notetaking, preparing for exams, text study systems, and so on. Emphasis is on the various skill methods, their underlying theories and principles, and methods for organizing or attacking problems in these areas.

The second part of the course is individual independent study and practice. Students may work on exercises flowing from the group lectures, use materials found in Reading and Study Skills Centers, or develop projects of their own. Students select from these available options depending on the results of diagnostic tests and consultation with the counselor or instructor. If available programs and materials do not meet the student's needs, new ones are developed.

The two parts of the course can be integrated in several manners such as (1) both each class session - lecture followed by lab or vice versa; (2) lectures for a number of sessions followed by sessions of practice; or (3) lectures and discussions in class with work assigned for clinic or home according to some schedule.

There is a subtle important philosophy which ties the course together. The course is actually a continuous, student-directed assessment. The students are taught to assess their study skills

and the significant features of the school situation in which they operate. As an integrative result of the lecture and individual practice, they learn to analyze and effectively deal with problems generated by the Text, Talk, Test, and Teacher.

The total course framework is presented in Figure 1. The chart is divided vertically into the group and individual parts of the course. Horizontally, the division is the 4 T's and the formula which combining them provides. Group topics cover the methods and theory while individual work options are covered by practical application.

The Basic Reading Rate is an assignment carried on throughout the course through which the philosophy stated above becomes a reality. The students are taught at the beginning of the class how to measure and record their reading. Once they have established their reading behavior baseline, they can assess the impact of dealing with each of the 4 T's against their base rate. A more complete explanation of the basic reading rate occurs later in the paper.

"T" = Text

Group Topics

Key lecture topics are the ways texts may be used in particular kinds of courses, possible study systems which might be applied to texts, and general tips on reading based on known facts and fallacies.

First, ways an instructor in a college

Figure 1. The 4 T's framework.

	TEXT	TALK	TEST	TEACHER	FORMULA
			The Methods and the Theory		
G	Course Usages	Content vs.	Exam Preparation	Ways of	Personal
	Study Systems	Form		Indicating	Schedule
R	Reading Facts	Listening	Kinds of Tests	Importance	and Plan
	and Fallacies	Notetaking	Exam Panic	Personal	of Study
O		Formats	Other Evaluative	Characteristics	Attack
		Editing and	Devices	Influencing	
U		Structure		Course Reaction	
		Ridiculous			
P		Reminders			
			Basic Reading Rate Lifeline		
			Practical Application		
	Improve Rate	Practice	Practice Test	Participate	Individual
	Efficiency	Listening	Taking	Individually or	Plan for
I	& Flexibility	to Lectures	Exam Panic	in Group for	Improvement
N	Learn Skimming	Practice	Desensitization	Work on:	
D	& Scanning	Notetaking	Develop Skills:	Concentration	
I	Develop Compre-	Analyze Courses	Writing	Motivation	
V	hension Skills	for Best	Spelling	Scheduling	
I	of Various	Attack	Vocabulary	Self-Discipline	
D	Kinds		Analyze for		
U	Practice Text		Specific Attack:		
A	Study Methods		Papers, Labs		
L	Analyze Courses				
	for Best				
	Attack				

course may use a text are discussed: (1) direct translation, the book is followed directly in lecture and for testing; (2) supplementary, the book is background for the lecture but not covered directly; and (3) some combination of direct and supplementary using one or more sources, perhaps a basic text with additional required reading at the library.

Emphasis is placed on the text in relationship to the lecture and on the best way to learn and to prepare for tests. For example, if the text is used in direct translation, the student may (1) synthesize lecture notes into the book using margins or supplementary note cards or (2) take notes from the book on one half of his note paper vertically and then synthesize added class points in the other. The point is to adapt some method to synthesize book and class learning which aids time efficiency, comprehension and retention.

The second topic is the introduction of an overall textbook approach which includes the three major methods: outlining, SQ3R, and underlining. Training and practice is given on each of the seven steps included:

1. Survey: look over assignment, notice verbal and visual study aids.
2. Read: with purpose.
3. Question: what the author is communicating.
4. Reduce: to major-minor point relationships.
5. Recite: state main ideas, write answer, underline.
6. Reflect: by editing.
7. Review: ask questions, define,

interpret, apply.

The techniques which relate to each text method are pointed out. For example, the "survey" technique is specifically a part of SQ3R, but rightfully should be incorporated into any textbook study. This seven step procedure is used to teach the student to select those techniques which will work most efficiently on a particular text for him individually. At the same time, he is becoming aware of the total skill packet necessary for text reading.

The final topic is the relationship between reading and comprehension skills. Flexibility and efficiency are the key words. The teacher's challenge to the student is to develop the optimum reading rate for the purpose to be accomplished. A comparison of reading rate which might be used for particular purposes is presented, such as skimming at several thousand words per minute to locate particular facts as opposed to reading at three or four hundred words per minute for general understanding. Some myths regarding the process of reading are exposed, i.e. "slower reading guarantees comprehension." Facts founded on research are presented including physiological time limitations for visually recognizing words on a page.

The student is encouraged to evaluate his present "bag of skills" by tests or self-analysis to see how flexible and efficient he is. If he feels some deficiency in this area, he may plan specific skill work as part of his individual options.

Sue Johnson

Individual Options

During the lab or at home, the student may elect to: (1) improve reading or flexibility in a variety of ways; (2) learn how to skim and scan; (3) develop general or specific comprehension skills such as organizing ideas, reading for critical understanding or inference, or learning to locate significant facts and details; (4) practice one or more text study method on prepared materials or his own texts; or (5) check his ability to identify how a test is being used in a course and how this affects his personal study formula for that course.

"T" = Talk

Group Topics

"Talk" refers to the lecture. Those skills and principles necessary to notetaking usually make up the content for class coverage. The notetaking process is divided into five steps for ease of presentation.

First, a distinction is made between content - what you record from the lecture; and form - the structure in which you record the content. Emphasis is realistically placed on content, but content is not always easy to record. Reasons for interference in the recording process, even when the lecture is well-organized, are suggested, i.e. the professor's too rapid speech pattern or the student's poor background. Ways to "just get the material down" are mentioned: developing a personal shorthand or alternating the notetaking with another student using carbon paper.

Sue Johnson

When content is easily recorded, then form of recording becomes important. Advantages of good form include aiding one's understanding of major-minor point relationships, and making reviewing easier.

How to recognize what's important is the second topic of the listening process. Points covered include (1) watching for the development plan of the lecture, such as inductive or deductive and chronological or logical; and (2) watching and listening for ways important items are stressed, such as change in the volume of the voice or writing on the blackboard. Once tuned up to"hear what is being said," the third topic of how to write it down is presented.

Traditional forms, such as outlining and listing points are presented. Variations are discussed such as (1) modified outline with simple space indentations and a few arabic numbers; (2) topic summarization by sectioning topics for the day on separate pages of the notes; and (3) making a table by recording in columns which were labeled before class to accommodate the information for the day. What is stressed, rather than form, is recording accurate content, reducing it to key ideas to check comprehension, and setting up notes for reviewing and self-drill. These three r's increase the number of ways to approach the material and reduce the boredom of repetition in studying.

Next, specific methods for editing notes to aid organization and retention are taught, "the what to do with notes after they are recorded." These techniques

include coding the margins, writing summary statements at the bottom of the page, or numbering ideas on a page.

The unit is closed with a brief reminder of all those ridiculous tips, such as "write on only one side of the paper," which make functioning easier.

Individual Options

Practical application of the theory and methods presented in the lectures may again be carried on during lab or at home. Students may: (1) listen to recorded lectures on different subjects, taking tests over content and/or taking notes to be compared with "ideal" sets; (2) bring in their own class notes to develop better techniques; (3) work through a specific assignment, taking notes in several different forms in some other course.

The instructor supervises, instructs, advises, and adapts materials. Here, as in every unit, each student is encouraged according to his needs and wants.

"T" = Test

Group Topics

"Test" as used here refers not only to actual kinds of tests, but also to any evaluative device used in grading, from attendance to class participation to reports and papers.

Class presentation begins with preparation helps for tests in general. Students are encouraged to build a

"universe of knowledge." This is a summary of all the information covered in a course from all sources. The format might be something like an outline, a list, a table, or a deck of flashcards. This serves as a basis for drilling oneself, not just to question knowledge of memorized facts, but also to check the ability to interpret and to apply.

Subjective and objective exams are considered next. Various kinds are defined, problems unique to each are discussed, and tips for getting maximum scores are given. For example, in essay exams, scheduling time to answer all questions is frequently a problem. A tip here might be to order all questions in a hierarchy of difficulty, writing answers to the easiest questions with the highest point values first, but under a strict time schedule.

Exam panic is given special emphasis in this unit because of its effect on almost every student. Special tips for controlling and reducing the physiological buildup related to panic are given such as, walking to the test to keep the body mechanisms in check or doing deep breathing with holds before exhaling to slow down accelerated body systems. The student is exposed to the relaxation conditioning technique to help desensitize himself. This technique may also be used to work on other academic and personal problems such as concentration, speaking in class, etc. (See Wark, 1971).

One other grading device is discussed, the preparation of a term paper. Correct procedures and practices such

as proper footnoting and bibliographical entries are presented with accompanying illustrations. Variations applicable to different subject areas are discussed. Library skills and usage are reviewed, and optional trips to the college library planned.

Attention is drawn to the possibilities of other grading devices, but only in relation to the individual's strengths and weaknesses and how he might best use them to obtain the maximum grade. For example, if one tests poorly, he may plan in his study formula for special attention to the term paper portion of the course. The students are encouraged to accept the responsibility for their study and academic lives and to exert force on their direction, to perceive themselves as challenged, not controlled.

Individual Options

Individual application by students might include:

(1) Practice on one or more kinds of test taking
(2) Preparation of a test plan or the universe of knowledge for some course
(3) Learning how to deal more effectively with any one of the grading devices, including how to participate in class when one's nature is shy
(4) Learning to apply relaxation conditioning to reduce specific, incapacitating academic behavior such as exam panic
(5) Working on any specific, related ability which affects success, such as writing, spelling, or vocabulary

Sue Johnson

During one academic quarter a student will not have the opportunity to work on all the individual skills he desires or needs in any unit. But it is hoped that once started he will know where and how he can improve.

"T" = Teacher

Group Topics

The human elements of the structure include not only the teacher and his course, but also the student and his reaction to both. The emphasis in this unit is on the idea that regardless of the student's knowledge in a subject or his ability to deal with all the techniques and to apply skills, the human element can and may cause an ultimate failure or success.

The lecture material is divided into two sections: first, those things about the teacher which influence the course and the way the student deals with it; and second, the psychological reaction of the student to the teacher and to the course.

Characteristics about the teacher which may influence the student's specific study techniques are such things as:
(1) the rate and volume of his speech;
(2) the mannerisms which alert the student to matters of importance and;
(3) style emphasis such as the general topic versus specific detail approach.
Resulting adaptations might include
(1) changing notetaking procedures due to the rate of speech (either slow or fast) regardless of lecture organization;
(2) changing place of setting to

compensate for volume of voice or concentration difficulties; or (3) better preclass preparation to deal with a general approach which assumes understanding.

This unit is the least tangible of the 4 T's. Much student participation in the class discussion with contribution of "anonymous" classroom experiences is encouraged. Creativity and ingenuity in learning to handle a variety of situations rather than "giving in," being overwhelmed or defeated, is stressed.

The second section dealing with the psychological reactions is a highly individual matter related to maturity, self-discipline, values, and other human variables. Positive responses to the teacher and course rarely cause problems, but negative ones interfere and distract from learning. If one is internally saying "I couldn't possibly believe what he is saying," it is unlikely that optimum learning will occur. Such reactions and emotional responses are only pointed out in lecture to alert the student so that he can take steps to counteract with positive solutions. Students concerned particularly with such problems are referred to behavior modification or academic motivation groups as individual options.

Individual Options

Individual work for this unit will likely be in small groups or in one-to-one counseling sessions. Groups of six to eight students with the instructor as facilitator focus on academic problems

such as organization, scheduling, motivation, and attitudes toward school. Through the group, the individual is reinforced for change in his desired direction and learns from feedback from others. Individual counseling for behavior modification may be necessary in some cases. This can be handled by the teacher if he is so trained or referred elsewhere if not. The wide range of problems found in this unit are more difficult to work with than pure skill needs. Unfortunately, also remedies are few and difficult to implement.

The Formula: A Personal Planned Attack

Group Topics

The end process necessary after covering each of the 4 T's is to tie together the parts in some meaningful whole. Students employ their study skills in classes, thus the real test is whether the student can apply all the general skills and knowledge in specific ways in specific courses he takes.

Classroom discussion now centers on the appropriate way to handle each of the T's when certain variables operate. Formulas are developed for a number of hypothesized classes or real courses provided by the students. Every class requires a different formula and will be unique to each individual. Questions which are answered in the study formula include:

1. How to handle the text
2. How to take notes and what will be necessary to edit them

3. What to study and how to do it generally on a daily basis
4. How to stay caught up daily and how to plan longer range projects
5. How to budget time to include all requirements for the course, for all courses in a given academic term
6. How to study specifically for the tests in this course
7. How to weight the various grading devices and to follow through with proportioning time accordingly
8. How to deal with the teacher and with yourself for optimum results
9. What special helps will be needed and built into the time schedule, such as discussion with other students and supplemental reading
10. What specific skills will be developed with outside help such as that obtained at the Reading and Study Skills Center

Any formula once developed will need to be continuously reevaluated and adjusted throughout the school term as additional information is received.

Individual Options

Having learned ways to handle the T's in lecture, the student in the lab can make a plan for improvement in academic work. He might learn to schedule time, work on specific skills still needed, do a self-analysis of relative strengths and weaknesses relative to each course or to his study skills as a whole, or compose a direction chart to indicate steps leading to his goal. He might consider prices he is willing to pay in terms of cost and time, and alternatives which might become necessary in order to obtain his goals.

The Basic Reading Rate

As stated earlier, the basic reading rate serves to unify the group and individual parts of the course. As an ongoing assignment, it provides a testing ground for application of the various methods taught and skills the student wishes to develop.

First the student is taught to time his reading in a textbook of his own choice. He is encouraged to use a kitchen timer or some inexpensive device to help him keep track of the time. The student reads for five minutes. He then counts the number of lines read during the interval and converts that to a close approximation of words per minute. This rate becomes a base against which the effectiveness of class techniques can be assessed while being applied in the study situation as a homework assignment.

The student is required to spend one hour weekly in timed reading. The recommended time division is twenty minutes on three different nights. Records are kept on graph paper for visual comparison at a glance.

A typical pattern of reading rate change has become evident over the past four quarters and is presented graphically in Figure 2. When the students are learning to apply the method, rate is erratic, stabilizing usually within two weeks. The student is also being instructed to practice analyzing his reading, to define problems, and to set small goals in an attempt to increase rate and control his behavior.

Sue Johnson

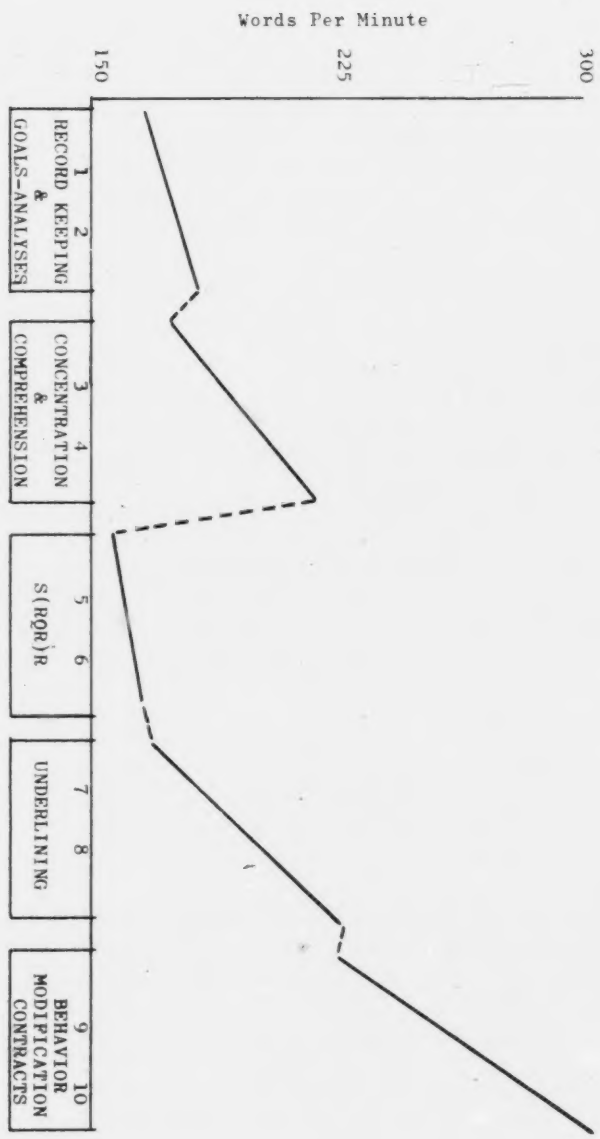


Figure 2. Typical Pattern of Reading Rate Change

The second emphasis or unit is devoted to improving concentration. The basic technique is to teach students how the study environment may have stimulus control of their study behavior. They are urged to set aside special times and places for studying. To check comprehension, students are asked to write a summary statement for each five minute reading. Most are quite surprised to see their rate increase markedly and are even more pleased when they find they are producing reasonable summaries as well.

Next, the student is taught to apply systematic study techniques such as pre-survey and recitation by notetaking. Students are cautioned, on the basis of recent research (Rothkopf, 1968), to make up questions <u>after</u> reading, not before as is advocated in some of the better known study methods.

Underlining, introduced during the fourth unit, usually results in a steady rate increase. Most students find that underlining is the most efficient technique for text study in terms of time spent and amount retained.

By the time unit five is begun, the student has had practice in the basic behavior modification techniques of self-analysis and goal-setting. He now applies the technique of writing a contract to produce a particular kind of reading or studying behavior. The nature of such contracts is discussed in Wark's "Five Cases of Behavior Modification" (1969). Contracts are witnessed by other students and are defined with contingencies of immediate

self reward or self punishment. One such contract was to read forty pages at not less than 300 words per minute or no smoking for an hour following the attempt.

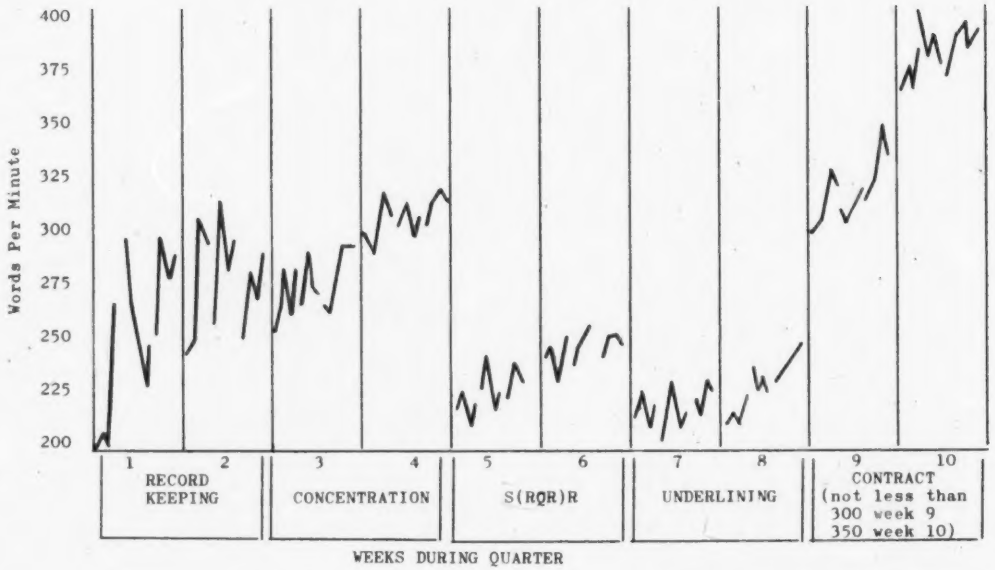
During this last portion of the quarter, the greatest improvement is noted. The final result is usually a doubled rate with increase in comprehension, according to student evaluation. The final complete graph is evidence also of transfer of learning to the "real life study situation" as well. Several examples follow.

K.A., a male student Summer Quarter, 1969, recorded the graph in Figure 3. While his contract produced the expected double rate, the reading material was a novel which may not have been comparable to the Newsweek articles earlier used. He, unlike most, did not find underlining helpful, preferring the SQ3R method for a study system. He made the following self-evaluation:

> I don't think my reading improved much from 7th to 8th grade until now. I could never afford the loss of comprehension, I thought. I've learned that comprehension can improve with rate increase and concentration techniques.

The graph in Figure 4 was made by a female student also enrolled during the Summer Quarter class. She put her own comments on the graph. Her pattern was one of continuous upward movement under all technique applications.

Figure 3. Basic Reading Rates - K.A. - Summer, 1969



Book: Newsweek

Contract: Lord of the Rings

Sue Johnson

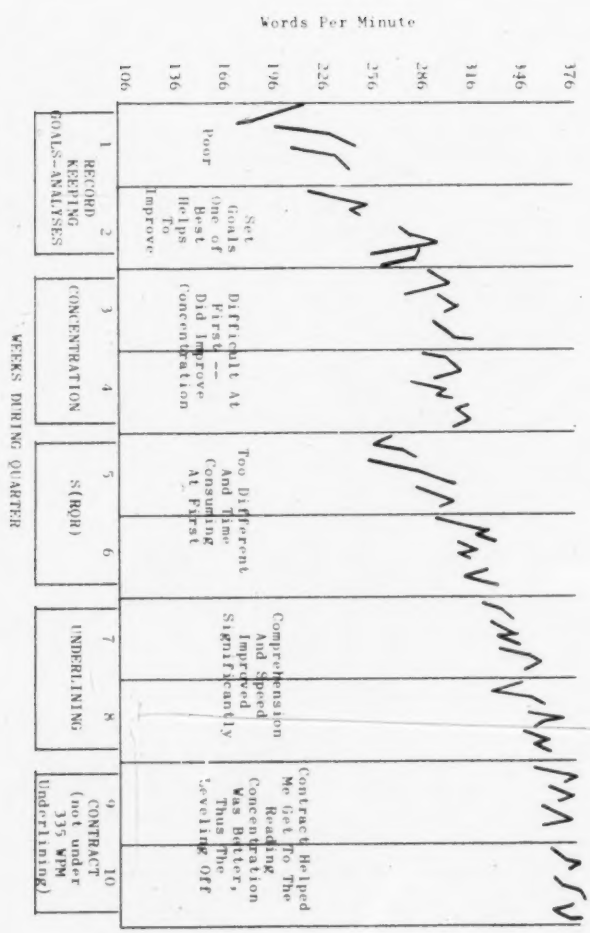


Figure 4. Basic Reading Rates - S.S. - Summer, 1969

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Underlining was her favorite technique and she was able to utilize it effectively after learning the basic technique. Her reaction to the assignment and the course follows:

> The BRR was a good means of motivation for getting involved in the whole class. Being in the lecture group made me feel my own problems were not insurmountable but this individual treatment in lab and my own efforts promoted maximum growth. The course reinforces what I knew and had not applied but from an entirely new approach.

For the major problem raised by the basic reading rate - the validity of student report - there is no solution. Unquestionably, it would be easy for a student to fake the data on his reading rate. The inclination, however, is to believe that the changes reflected in student reported curves are accurate. First of all, 80%-90% of the students come to class with their records up to date. They all tend to demonstrate a fairly similar pattern. It is extremely unlikely that agreement would appear by accident. It is equally unlikely that the students would bother getting together for a group deception. There is no payoff. Grades are determined by individual effort, not group achievement. Therefore, the tendency is to believe in the accuracy of the reports.

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Course Outcomes

The desired course objectives have been stated as follows:

(1) To provide skills information in the 4 T's framework, representative of the areas involved in student academic pursuit.

(2) To provide skills practice in the T's where individual needs are felt most urgent.

(3) To provide transfer of learning from group and individual course experiences to academic subjects and personal life.

(4) To teach the student to exercise self-discipline through assessment, goal setting, and problem solving approaches.

The initial feedback from students indicates that these outcomes are being achieved in greater or less proportion for each student. Further objective assessment will need to be made with future classes and follow-up on present classes.

Conclusions

The 4 T's system is not new. It only represents a different way of integrating the already known world of reading and study skills. The existing techniques, approaches, methodology and content of the learning resource field are woven together in a systematic framework. Hopefully, this framework adds meaning to what sometimes appears to be disjointed fragmentation of vital materials. It is a kind of check list. It can be

expanded or reduced to include as much or as little as is desired for the purpose to be accomplished. The course model has already been adapted and used in some daytime, evening, and special classes at the University of Minnesota. It has proven adjustable to length of course, facilities regardless of completeness, preference for topic emphasis, instructor strengths and weaknesses, and variations in kind of students and range of needs.

Though developed as a means to achieve "the best of both" group and individual teaching approaches, the 4 T's model can be adapted for "the best of any" usage. Whether for teachers planning classes, individuals pursuing courses, counselors designing learning centers, or administrators implementing total programs, the model may serve as a basic organizational framework.

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ATTITUDINAL FACTORS AMONG MARGINAL ADMISSION STUDENTS

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The purposes of this paper are to (1) show the need for considering social psychological factors which might affect the academic success of marginal admission students; (2) review some pertinent social psychological literature which might describe these students; and (3) report a study which was an attempt to find ways to treat these students more effectively.

Introduction

Over a period of thirty years, the reading program at Wayne State University evolved from a somewhat superficial speed reading course into a well-balanced reading and study skills center. The program now includes individual and group counseling and training designed to assist a heterogeneous urban university population to develop the reading and study skills necessary for academic success.

The selective admissions policy of the University has given the reading and study skills department the advantage of working with students of good potential. That is, except for an occasional tilt of the Admissions Office's Ouija Board, these students have met the traditional criteria of high school grades and test scores predictive of ability for successful college work. They represent a cross section of the Detroit metropolitan area on such variables as religion,

ethnic background, economic level, and race. The one factor they have in common is that they all met traditional entrance requirements.

The instruction in the program has primarily been of a rational nature. Lectures, discussions, and exercises on the how, where, when, and why of effective study have been employed. This approach appears to have been successful for the student with average or better preparation for college, for the successful student seeking to improve his skills, and for the student with a specific skill deficit.

Although there have been occasional experimental programs for non-admissable students in the past, the major focus of the program has been directed toward students in the above categories. Beginning with the Summer of 1968, the University initiated a program known as Project 350, for the admission of students classified as marginal and high risk. The distinction between the two categories reflects the degree to which they fall below formal entrance requirements. The students are graduates from high schools in areas which meet the Federal guidelines for disadvantaged. They are recruited through the cooperative efforts of the Admissions Office, high school counselors, and a citizens' committee. These students are required to take a reading efficiency and study skills course.

The development of a viable reading and study skills program for these marginal students has now become a major concern. The majority of the students in the

marginal admission project are poor, black, educationally unsuccessful, and live in the inner city. They fall in the group which Moore (1970, p.6) said ". . .appear to have little prognosis for success. Yet, many of them possess those intangible qualities of creativity, personality, and tenacity which counteract the customary indicators of academic prowess."

The committment to work with marginal students is based on the assumption that this assessment, and similar statements by others, is correct. The problem is to identify the pertinent factors which affect the performance of these students. Coleman (1966) has pointed out that inner city students are the victims of inadequate and inequitable education. If so, can the traditional more rational approach to reading and study problems effectively improve their chances for academic success? What about the debilitating effects of their previous experiences on educational attitudes, motivation, achievement goals, self-image, etc.?

What is needed are psychological descriptions of these students--especially attitudinal and motivational. Once these descriptions are made, effort should be taken to identify which factors might affect their academic performance. If certain factors can be found to affect performance significantly, investigators should endeavor to determine if and how these factors might be modified.

Roger S. Pepper & John A. Drexler, Jr.

Description of Marginal Admission Student at an Urban University

A review of the psychological literature which might describe marginal admission students at an urban university reveals some common characteristics. Roueche (1968) describes these students as graduating from high school with a low C average, being deficient in language and math skills, having poor study habits and low motivation, having unrealistic and ill-defined goals, and representative of homes with minimal cultural advantages and a minimum standard of living. Their socio-economic level would be considered lower class. It must be remembered, however, that these are generalizations and are not common to all inner city youth nor are they common to all marginal admission students.

The factors to be reviewed here are motivation, delay of gratification, feelings of inferiority, estimation of ability and locus of control.

Motivation

Baron and Bass (1969) propose that rewards which focus on personal praise (you're good) are more effective for lower class children than rewards which focus on achievement (that's a good job). The opposite is true for middle class children (Terrall, Durkin, & Wiesley, 1959; Zigler & DeLabry, 1962; Zigler & Child, 1969). Two interpretations are offered for these findings (Zigler & Child, 1969). One interpretation states that reinforcement for black children

in school is meted out for obedience and docility rather than for academic achievement. Another interpretation is that the effectiveness of certain reinforcers changes as a child develops (Havinghurst, 1970). Personal praise is a salient reward for young children, but satisfaction or self-reward at performing well becomes more salient as the child grows older. Zigler and Child (1969) state that poor children are not as likely to reward themselves for or be satisfied with a good performance as are middle class children. Havinghurst (1970) explains this by pointing to the facts that many minority group families are larger than the average family in the population and that the fathers are often absent. Because of many pressures with which the mother must learn to cope, she becomes satisfied when the child is pacified. The mother rarely dispenses reinforcement for achievement and rarely pays attention to achievement related activities. It would appear that feelings of satisfaction would have motivating properties and would be necessary for academic success in college.

Delay of Gratification

Lower class children are also less apt to delay gratification of needs. Experience has taught them to distrust promises of a better future (Mischel, 1958, 1961). Activity directed towards educational objectives requires the ability to delay gratification. Bard, Lerner, and Morris (1967) state that educational goals are not easily conceptualized by these students. Their immediate concern is with acquiring the basic physical necessities.

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Feelings of Inferiority

Educationally disadvantaged students feel inadequate and inferior to other students (Moore, 1970). An explanation for this might be found in Rosenthal and Rosnow's (1969) research on experimenter expectancy which has carried over into the area of education. A teacher expects a student to function in a certain way; the student perceives the teacher's expectation and attempts to live up to the expectation. For example, many students who are capable of doing better work in school, do average or below average work because they are made to feel that they are "C" or "D" students.

Institutions of higher education may be serving to perpetuate these feelings in students. When this writer asked his reading efficiency and study skills class why they thought they were taking the course, the response was, "Because we're dummies." During counseling, marginal admission students complained of professors who began a course by stating that they weren't able to teach the Project 350 students anything the previous year and didn't expect to be able to teach this year's students anything either. One professor began a course by recognizing the fact that the project students were not qualitatively equal to his regular students and refused to give any project student a grade higher than a "C." These students are very aware of the connotations of the labels applied to them: disadvantaged, project student, marginal admission, high-risk admission.

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Locus of Control

Locus of control is a variable which describes the way a person feels that his destiny is determined. It defines the extent to which individuals perceive causal relationships between their behavior and the consequences of their behavior. A person with an internal locus of control feels that he himself can determine what happens to him, whereas a person with an external locus of control feels that chance or luck determines what happens to him. Moore (1970) claims that high-risk students are quick to attribute their difficulties to their family, teachers, racism, etc. Thus, a student with an internal locus of control would say, "I got an A or B." A student with an external locus of control would say, "The teacher gave me an A or B." Coleman (1966) found that black students are more externally oriented than white students. He also found a relationship between locus of control and achievement for this group: the more a black student feels an internal locus of control, the better his grades.

Locus of Control and the Marginal Admission Student

The first factor to be researched was locus of control. This construct is derived from social learning theory (Rotter, 1954, 1955, 1960, & 1966). A reinforcement serves to increase the subject's expectancy that a particular act will elicit a certain reinforcement or reward. Children learn to distinguish between activities which are causally related to reward and those which are not. The reinforcement history of an

individual will determine which activities he perceives as being causally related to some reward. If a child lives in an environment where reward and punishment systems are consistent, he will learn or feel a causal relationship between his behavior and reinforcement; internal locus of control. However, if his environment maintains an inconsistent system of rewards and punishments, he will not learn causal relationships between his activity and reinforcement; he will feel an external locus of control. There is no clear cut distinction between internal and external locus of control, but there are degrees of internality and externality.

Havinghurst (1970) has pointed out that from early childhood, minority group children have been exposed to a system of rewards and punishments that has been inconsistent. For this group there is little regularity in the meting of rewards and punishments.

A relationship between need for achievement and locus of control has also been suggested (Rotter, 1966). If an individual has a high need for achievement or is highly motivated toward achievement, it is likely that he feels he can determine the outcomes of his efforts.

Phares (1957) made the first attempt to measure locus of control. Since then, many other scales have been developed to measure this trait in an individual: i.e., Crandall (1965) developed a test for children; Coleman (1966) used a three item questionnaire in his study of equality of educational

opportunity; Rotter (1966) developed the scale most widely used and known, and Gurin, et. al. (1970) developed a scale for black students.

Hypotheses

It was hypothesized that there would be significant negative relationships between locus of control and the subscales of the Brown-Holtzman (1965) Survey of Study Habits and Attitudes (SSHA). The SSHA measures an individual's study habits and his feelings toward teachers and education.

Another hypothesis was that students who felt an external locus of control at the end of a reading and study skills course would not do as well in the course as students who felt an internal locus of control. Two instructional methods were used, demonstration and lecture, to test whether individuals with differences in locus of control would respond better to different instructional methods.

Method

Design. The final design was a 2 x 2 x 2 factorial design. The variables were locus of control (internal and external), instructional method (demonstration and lecture), and instructor (two instructors taught the course using each instructional method).

Subject. The subjects (Ss) consisted of students from Project 350 who began their college studies at Wayne State University, Detroit, Michigan in the Summer of 1970. These students

were labeled marginal admission students and (1) were recruited from inner-city areas of the Detroit metropolitan area; (2) were considered economically poor; (3) had high school honor point averages ranging from 2.4 to 2.74 on a four point system; and (4) were primarily black (91%). The remaining 9% of the students were of Spanish-American and other descent.

Data for the correlational parts of the study were from 184 of these students. Data from the remaining 66 students were not used because of (1) students dropping out of the program; (2) invalid tests; or (3) students who did not have a complete battery of tests.

Forty-three students participated in the instructional method part of the study. Because students chose the section of the reading class that best fit their schedule, it was impossible to randomly assign students to the different experimental conditions. It was assumed, however, that there was no systematic factor which might lead a student to choose one section over another. To enhance the credibility of this assumption, the following hypothesis was tested: there are no differences among students in reading ability, study habits and attitudes, and aptitude between the two experimental groups. No differences between groups were found on the following scales: (1) Diagnostic Reading Survey (Triggs, 1963); reading rate, story comprehension, vocabulary, paragraph comprehension and total comprehension; (2) Survey of Study Habits and Attitudes (SSHA) (Brown and Holtzman, 1965); delay avoidance (DA), work methods (WM), teacher approval

(TA), educational acceptance (EA), study habits (SH), study attitudes (SA) and study orientation (SO); and (3) Scholastic Aptitude Test-Verbal (SATV) and Scholastic Aptitude Test Quantitative (SATQ). Random assignment was used, however, to assign an instructor to teach a certain section with a certain method.

Procedure. The limitations of a study which seeks to increase the success ratio of a program with marginal admission students by looking at locus of control and instructional methods were immediately recognized. (1) Ethical considerations would not allow a control or non-treatment group to be run. No treatment group would receive less than what would normally be given a student were the study not run. (2) Instructor differences might allow different instructors to function better using different teaching techniques. It would be difficult to maintain control between instructors. (3) Section differences, these writers felt, gave each section unique characteristics. Different classes or groups might respond differently to the same teacher using the same method. In spite of these limitations, these writers felt that the study would be valuable and might at least suggest ways to control for these problems in the future.

Two instructors each taught three sections of the reading efficiency and study skills course (RE 0094). Different instructional methods were used for each section. (1) The Lecture method was the traditional method used in the basic RE0094 course. It was the rational approach, a "how to do it" method.

(2) In the Demonstration method students participated in demonstrations of each technique taught. The discussions centered around specific course content. For example, when textbook reading was covered, the students read from a chapter in a textbook, and the instructor demonstrated a technique (SQ3R) for doing this type of reading. The students also took notes during a lecture. A professor came to class and lectured on the material read in the textbook. Detailed discussion of the notes followed the lecture. The students received guided practice in studying for an exam, with emphasis on drawing comparisons and contrasts in the material being covered. They took an exam based on the textbook reading and the lecture.

Another method, discussion, was used but was eliminated from this analysis. This method consisted of attempts on the part of the instructor to draw out of the student suggestions for the same techniques presented in the lecture method. The instructor encouraged the students to discuss freely the advantages and disadvantages of each method. Both instructors thought that including the data from this condition would confound the results. They found it difficult to distinguish clearly between this method and parts of the other two methods, and they felt that the students in these sections were particularly hostile and unresponsive. The problems with this condition went beyond the scope of the present study.

The Crandall (1965) Intellectual Achievement Responsibility (IAR) scale was to be the measure of locus of control and be administered as a pre- and post-

test of locus of control. The Gurin (1970) scale was rejected because not all the students were black. Moreover it was racially oriented and might engender hostility among black students. Coleman's (1966) scale was rejected because of its brevity and because no reliability or validity scores were reported for it. The IAR scale was accepted over the Rotter (1966) scale because it distinguished between feelings for success and failure and because it was academically oriented. Although the Crandall IAR was written for children, it had previously been used with this age group (Baron and Bass, 1969). During this study, the use of the IAR scale was discarded in favor of the Rotter scale for the reasons presented in the results section.

For comparison purposes, the IAR scale was to be administered to the marginal admission students and to a randomly selected sample of regularly admitted students. Two hundred and fifty students were randomly selected from students regularly admitted to Wayne State University as freshmen for the Fall Quarter, 1970. Since there was no opportunity to bring these students together to administer the test, a copy of the IAR was sent to them with a stamped, addressed return envelope. Of the 250 students to whom these tests were sent, 116 returned the tests. Of those, 107 were usable.

The Rotter I-E scale, the Triggs' (1963) Diagnostic Reading Test, Survey Section, Upper Level, and the Brown-Holtzman (1965) Survey of Study Habits and Attitudes were administered to the students at the end of the course.

Results

There were no differences between the regularly admitted students and the project students on Crandall's IAR scale. Table 1 presents a comparison of these groups.

TABLE 1

Comparison of Regularly Admitted (RA) and Marginal Admission (MA) Students on the Crandall IAR Scale

	Success Scale		Failure Scale	
	RA	MA	RA	MA
$\bar{X}$	13.22	12.72	12.50	12.23
s	2.69	2.09	2.74	2.12
N	107	186	107	186
	t = 1.64 (not significant)		t = 0.87 (not significant)	

The range of scores was narrow for both groups and measures of central tendency indicate that most students felt a high internal locus of control as compared to other groups who took the test (Crandall, 1965; Baron & Bass, 1970; Baron & Ganz, 1970). Possible explanations for this are (1) the purpose of the test could be easily determined by all students who took it and its use should be restricted to younger students; (2) it was the marginal admission students' first day of college and their excitement and anticipations may have raised their scores; (3) or the orientation session in which marginal students

participated may have been effective in raising their feelings in the direction of an internal locus of control.

Although there was no evidence to rule out the second and third explanations, there was supportive evidence to suggest that the first was correct. Past research would suggest that there should be a difference between regularly admitted and marginally admitted students (e.g. Coleman, 1966; Moore, 1970). Even if there were no real differences between groups on locus of control scores, one would expect there to be a wider range, or greater variance, for both groups. Beyond these arguments, 27% of the students correctly determined the nature and purpose of the questionnaire.

At this point, these writers decided not to use Crandall's IAR in the analysis and to substitute Rotter's (1966) I-E scale. The design was changed from a pre-test, post-test design to a post-test only design (Campbell & Stanley, 1963).

Table 2 shows the distribution of scores on the Rotter I-E for a group of introductory psychology students (Rotter, 1966) and for a group of marginal admission students. The marginal admission students felt a more external locus of control than did the norm group described by Rotter. This finding is consistent with the findings of past research (Rotter, 1966; Coleman, 1966; and Moore, 1970). Males felt a stronger external locus of control than females.

Correlations were run between the Rotter I-E scale scores and the various

TABLE 2

Comparison of Rotter's(1966)Students (RS) and Marginal Admission Students (MA) on the Rotter I-E Scale

	Males		Females	
Score	RS	MA	RS	MA
21				
20				
19				
18				
17				
16				
15				
14		Q_3		
13				Q_3
12		Q_2		
11	Q_3		Q_3	
10				Q_2
9		Q_1		
8	Q_2		Q_2	Q_1
7				
6			Q_1	
5	Q_1			
4				
3				
2				
1				
$\bar{X}$	8.15	11.57	8.42	10.37
s	3.88	3.65	4.06	3.86
N	575	76	605	112

subscales of Brown-Holtzman's (1965) SSHA for the marginal admission students. Statistically significant correlations were obtained and are presented in Table 3.

TABLE 3

Correlations Between Rotter I-E Scale and the Subscales of Brown-Holtzman's SSHA for Marginal Admission Students

N = 184; d/f - 182

Scale	r
Delay Avoidance (DA)	- .25**
Work Methods (WM)	- .17*
Teacher Approval (TA)	- .32**
Education Acceptance (EA)	- .38**
Study Habits (SH) = DA + WM	- .23*
Study Attitudes (SA) = TA + EA	- .37**
Study Orientation = SH + SA	- .32**

* $p < .01$
** $p < .001$

These correlations indicate that there is some common variance between the I-E scale and the SSHA. The correlations for the attitude subscales are higher than those for the study habit subscales. All the correlations are negative. Individuals who felt an internal locus of control tended to report having better study habits and attitudes than

individuals who felt an external locus of control.

In the instructional methods part of the study, a three-way analysis of variance was run using post-treatment reading test scores as the dependent measures.

Reading rate. There was a main effect of instructor on this dependent measure. Instructor A's students read more quickly than instructor B's students across all conditions.

Story comprehension. There were no main effects on any of the factors in this dependent measure. There was, however, a significant interaction between instructional method and locus of control. Individuals who felt an internal locus of control scored higher than externals in the demonstration condition and higher than internals in the lecture condition. Externals scored higher than internals in the lecture condition and higher than externals in the demonstration condition. These data are presented in Table 4.

Paragraph comprehension. There was a main effect of instructor on paragraph comprehension (.01). Instructor A's students did better than instructor B's students across all conditions. Although there were no significant interactions, there was the same trend toward an instructional method by locus of control interaction. A three-way interaction approached significance at the .05 level.

TABLE 4

Analysis of Variance:
Story Comprehension

		Instructional Method	
		Demonstration	Lecture
Locus of Control	Internal	13.2	11.4
	External	11.1	13.7

N = 43

Source	d/f	MS	F
A--Instructional Method	1	1.4726	0.1449
B--Locus of Control	1	0.1926	0.0189
A X B	1	45.4140	4.4693*
Error	39	10.1611	

* significance at .05

Total comprehension. The main effect of instructor found in paragraph comprehension may have washed out any interaction in total comprehension (total comprehension equals paragraph comprehension plus story comprehension) (Table 5). There was a main effect of instructor in total comprehension ($p < .05$), and a method by locus of control interaction approached significance at the .05 level.

TABLE 5

Analysis of Variance:
Total Comprehension

		Instructional Method	
		Demonstration	Lecture
Locus of Control	Internal	22.8	21.1
	External	21.3	25.2

N = 43

Source	d/f	MS	F
A--Instructional Method	1	11.9706	0.4645
B--Locus of Control	1	15.8106	0.6135
A X B	1	72.6000	2.8173*
Error	39	25.7692	

* significance at .10

Discussion

There were significant negative relationships between scores on the Rotter I-E and subscales on the Brown-Holtzman SSHA for the marginal admission students. The more an individual had positive study habits and attitudes, the more internal were his feelings of locus of control. This would suggest, as do Coleman (1966) and Moore (1970), that locus of control is a critical variable to consider when dealing with minority

group marginal admission students. Should future data substantiate the relationship between locus of control and achievement found by Coleman (1966), scores on some locus of control test might be used as a selection criterion. Beyond this, investigators might endeavor to determine whether one's feelings of locus of control could be modified.

In the instructional method portion of the study, the main effect of instructor on reading rate might have been caused by: (1) some special ability of instructor A to teach reading rate better than instructor B; (2) differential emphasis on reading rate in individual lectures or during the course of RE 0094; or (3) differences in emphasis, tone, or inflection in the instructors' reading of the standardized instructions for the Triggs' (1963) Diagnostic Reading Test. The instructions state, "read as rapidly as you can, and still understand what you read." The fact that there were no differences in comprehension of this part of the test might rule out #3 as a possible alternative explanation. However, there was no real evidence to rule out or accept any of the three alternatives.

In the story comprehension dependent variable, there was an interaction between locus of control and instructional method. In the demonstration condition, students who felt an internal locus of control did better than students who felt an external locus of control. In the lecture condition, students who felt an external locus of control did better than students who felt an internal

locus of control. This result differed from the original hypothesis.

A recent study by Baron and Ganz (1970) might help explain these results. They found an interaction between locus of control and mode of reinforcement (intrinsic and extrinsic). Intrinsic rewards are those which an individual gives to himself, e.g., a feeling of satisfaction. Extrinsic rewards are those which must come from outside oneself, e.g., a tangible reward or verbal reinforcement. Whereas some individuals can effectively utilize intrinsic rewards, many individuals remain dependent on extrinsic rewards (Havinghurst, 1970). Baron and Ganz predicted and found that minority group children who felt an internal locus of control responded better to intrinsic rewards than to extrinsic rewards. Minority group children who felt an external locus of control responded better to extrinsic rewards than to intrinsic rewards. Internals also responded better than externals to intrinsic rewards, and externals responded better than internals to extrinsic rewards. Baron and Ganz suggest that internals may have responded more favorably to intrinsic rewards because they might have been aware of the redundant nature of extrinsic rewards; e.g., the answer is obvious, why does he keep praising me for this?

The nature of the information given the Ss in the present situation might be similar to the Baron and Ganz study. No attempt was made to vary systematically the mode of reinforcement in either treatment group; i.e., no attempt was made to mete out extrinsic

rewards. All students had access to intrinsic rewards through constant feedback of reading rate and comprehension scores in classroom exercises. However, the nature of the information presented to the students in the two conditions may have been perceived differently by internals and externals. The individuals who felt an internal locus of control may have perceived the lecture information as obvious, or unnecessary, even though they may not have previously made use of the information. Thus, they may have responded to it in the same way that they would respond to redundant extrinsic rewards. Internals may not have minded the same information in the demonstration method of the study since they were encouraged to participate in using and discussing it.

Another explanation for this phenomenon may lie in the nature of the situation. Perhaps internals responded best to an informal, less structured environment, whereas externals responded best to a more formal, structured environment.

The above explanations are merely suggestions to help interpret the results of this study. No evidence has been found to augment or rule out the validity of either explanation. Further studies will have to be run to delimit the relevant variables.

While story comprehension requires an individual to report the facts that he has read, paragraph comprehension also tests skills such as interpreting what has been read and understanding the main idea of the selection. A main effect of instructor was found for

paragraph comprehension as it was for reading rate. This may be explained in the same way as the effect for reading rate. A three-way interaction, however, approached significance. This might be interpreted in light of the discussion under story comprehension.

Total comprehension consists of the sum of story and paragraph comprehension. Due to the strong instructor effect in paragraph comprehension, there was a significant main effect of instructor in total comprehension. Nevertheless, the locus of control by instructional method interaction persisted and approached significance at the .05 level.

Since the institution defines success in a marginal admission student program by honor point average, longitudinal studies must be run using this dependent measure. Variations in honor point average would outweigh any variations in attitude or reading test scores.

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INCREASING TASK BEHAVIOR IN A LANGUAGE ARTS PROGRAM UNDER VARIOUS CONDITIONS OF REINFORCEMENT

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Behavior problems are common results of student non-attention to tasks. At all levels, elementary, junior high, and high school, the problems generally tend to be of the disruptive kind; at the college level the result is dismissal. Techniques for increasing task behavior include teacher praise for work, punishment for non-work (or the withholding of praise for work accomplished), assigning grades, and so on.

This paper reports the results of several experiments designed to assess the effectiveness of techniques for initiating, maintaining, or increasing task behavior in a language arts program.

The classes consisted of subjects from elementary schools who had been diagnosed primarily as reading failures; most were also behavior problems. In the situations to be reported, six conditions were imposed which were assumed would increase the amount of work done by a student. Task behavior was defined as the number of units of work executed by the subject during a 50-minute classroom session. A unit of work was one correct discrimination (or answer) to a particular stimulus.

For example, one unit was counted when the response to the oral stimulus CAT...CAT...CAT was "yes," that is, all

words are the same, vis-a-vis, CAT... BAT...CAT where a correct answer was "no," that is, they are not the same. Or, the visual stimulus was $\frac{t}{f \quad t}$ the directions being to circle the one at the bottom of the line that looks like the one at the top of the line. The correct response is to circle the bottom t. The entire program consisted of a total of about 17,000 discriminations, from the sound and letter level through the phrase and sentence level, in a programmed language area series (Smith, 1964).

Units, or points, for correct discriminations were uniform and consistent for all subjects under all conditions. Incorrect or incompleted units were always ignored by the teacher.

The six conditions imposed on the various classes were: (1) task behavior with no consequences; (2) task behavior with teacher approval contingent on completion of an agreed amount of work (a contract); (3) task behavior with the conditions of (2) plus a work break for a completed contract; (4) a refinement of the contract and work break of condition (3); (5) all the conditions (except 1) with payment in money; (6) all the conditions (except 1) with money excluded.

Description and Results of the Various Conditions

Condition 1. Under Condition 1, subjects worked without consequences. There was no feedback on either the results of what was done (correct or incorrect responses) or responses from the teacher regarding behavior, except that when a

classroom rule such as "no talking," was tested, the teacher asked in a neutral manner, "What is the rule?"

The six children were first graders diagnosed as being (besides non-readers), hyperactive, passive-aggressive, anxious, and aggressive. The work curves for this group are shown in Figure 1.

These curves are quite characteristic of a situation in which there are no consequences for tasks. Prior experiences at the University of Michigan Reading Improvement Service had shown that other subjects working under this condition exhibited the same trend, viz., high initial output, followed by more-or-less extinction, with some periods of recovery. This held for junior high and high school students and for adults with reading problems who came to the Service.

Condition 2. Under Condition 2, the rigorous restriction on the teacher's behavior was lifted to the extent that the expression of approval was permissible. Children were asked to agree to do small amounts of work, and when this contract was completed, and checked by the teacher, she responded with an appropriate reward in the form of some positive comment. At that point, the child could choose another contract or go into a non-work area equipped with books and drawing materials. The teacher helped each child keep a bar graph of the amount of correct work accomplished from each contract; this was displayed on the bulletin board in the classroom. Work output under Condition 2 is shown in Figure 2.

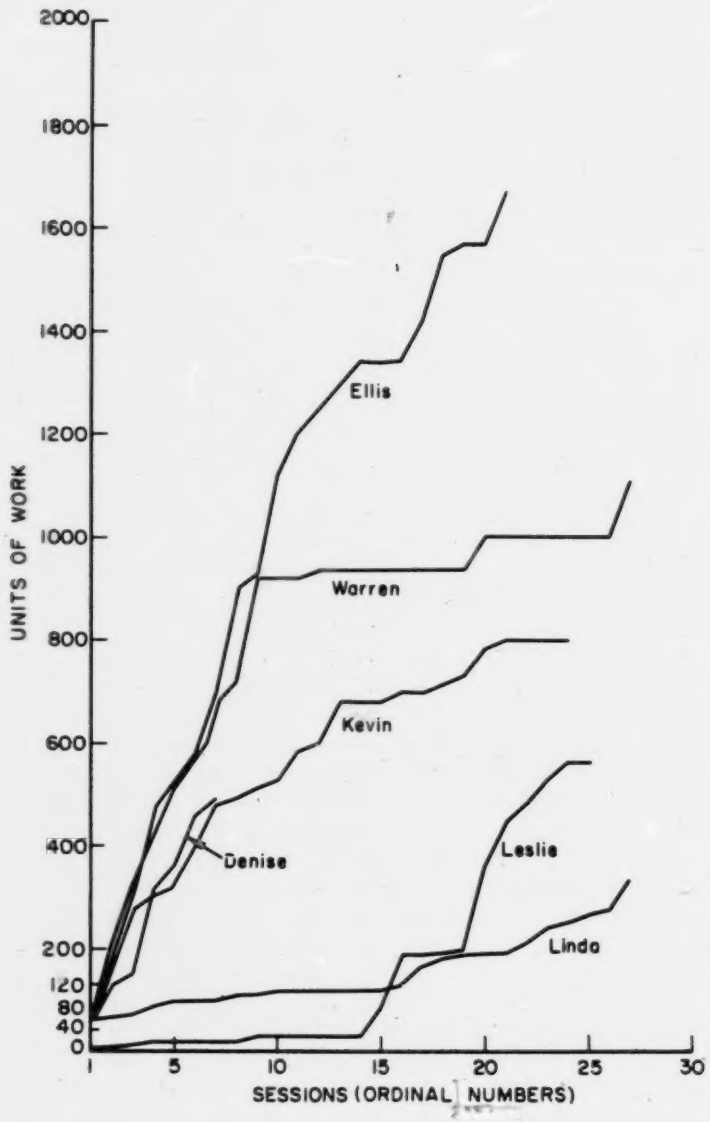

Figure 1. Cumulative units of work under conditions of no reinforcement.

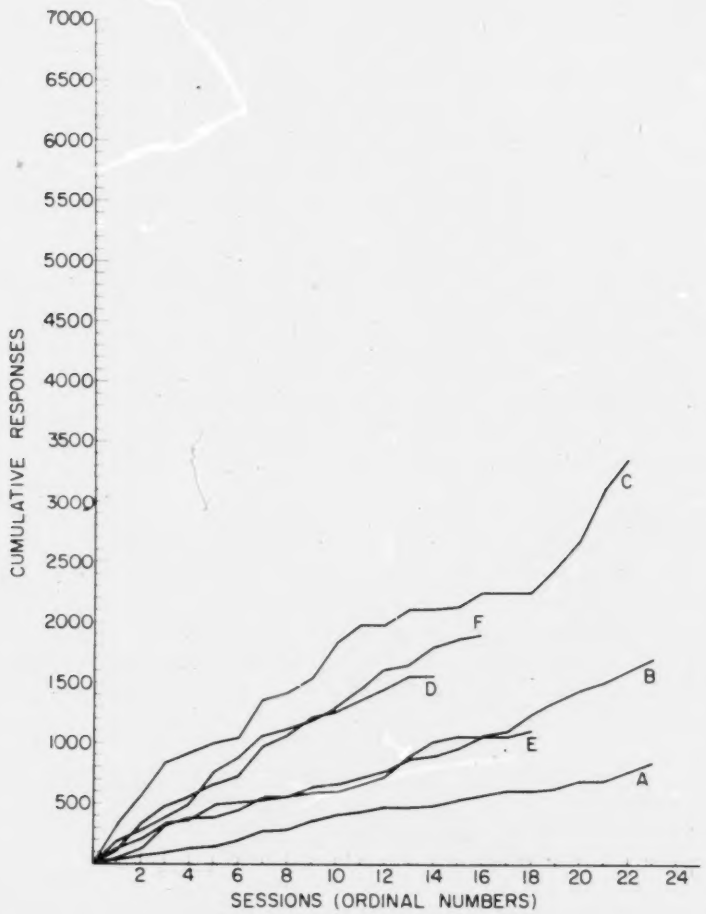

Figure 2. Cumulative units of work under conditions of teacher approval and a contract-for-work system.

The six children in this classroom ranged in age from eight to ten. Three (A,B,C) were from special classes for mentally retarded; two (D,F) read about one grade below their in-school level; one (E) read at grade level but was described as a behavior problem.

The difference between work outputs displayed in Figures 1 and 2 is only in amount of work, rather than the increases. All tend to approach extinction, although C's curve shows an increase following session 17. The explanation for this increase is easy enough to come by; subjects E and F (two other boys) were frequently absent and subject D had graduated; subjects A and B were girls and avoided interaction with C. Furthermore, much of C's work during this final period was with the teacher as director.

Condition 3. The impending marriage of the teacher in charge of Condition 2 changed some of the independent variables. A new teacher would, of course, bring another set of approval responses into the classroom, along with other techniques for using the materials. These changes were:

1) Approval became more matter-of-fact, that is to say, less effusive. (The first teacher is a lady, the second, a man.)

2) No rules were imposed on behavior. If talking or movement seemed disturbing or excessive, the teacher asked for order.

3) Since none of the materials in the program had been completed during the prior periods, the children continued

using them. Materials, however, were altered in that the larger books were reduced to smaller books.

The contract system used before was continued along with the visible progress plotting. Work curves resulting from this condition are shown in Figure 3.

Four subjects from Condition 2 continued in this classroom (A,B,C,D). Subject E was not re-enrolled, and subjects G and H, two boys aged $9\frac{1}{2}$, were new.

Subjects A and B continued to work slowly and steadily. Subject H, after a spurt during session 2, continued at a fairly steady rate, while C,D, and G showed definite extinction of work.

Condition 4. This condition involved a refinement of the work-break and contract system. The children entered the classroom [illegible] non-work area and were called one at a time by the teacher to the work area. A portion of the child's work was set out and he elected a specific amount, the term "contract" was used by teacher and students. In this manner, all subjects began the period. When a contract was completed, it was brought to the teacher, who checked it and awarded the number of points earned. These were added to the graph, which was now made into a cumulative curve. At the completion of the contract, the child could either elect another contract or take a 5-minute break; if he opted for the latter, it was necessary to set a contract to do on his return. Only one break between contracts was allowed. The rates of work are shown in Figure 3, sessions 10-15.

The effect of the work-break consequence on the work output of A and B was nil; they continued slowly and steadily. The acceleration of the other curves under this condition was favorable, especially for C,D, and G, who had extinguished during the first 10 sessions. However, all curves, except A and B, showed extinction by session 14.

Condition 5. Under Condition 5, children were paid on a variable ratio of money-to-contract response. The other conditions remained the same. The ratio of money to correct responses began at 1:1 (1¢/5 correct responses) by the end of session 24. Ratios varied with each child. The work outputs are displayed in Figure 3, sessions 15-24.

Only A seemed unaffected by the monetary consequence. The other curves definitely accelerated, C, it will be noted, leveled between session 17 and 19; at the beginning of session 17, he contracted for a very large amount of work in spite of the teacher's reminder that a contract must be completed before payment. He finally completed the contract during session 20 and thereafter he chose smaller amounts of work. A and B had little reaction to the payment except to ask what it was for. After session 17, the teacher suggested to the parents of A and B that some of the money be spent by the child immediately after class. The subsequent acceleration for B may be due to this. A increased her work slightly at this time, also due either to the recognition of the value of the money or that she had fewer opportunities to interact with B, who was now working more than before.

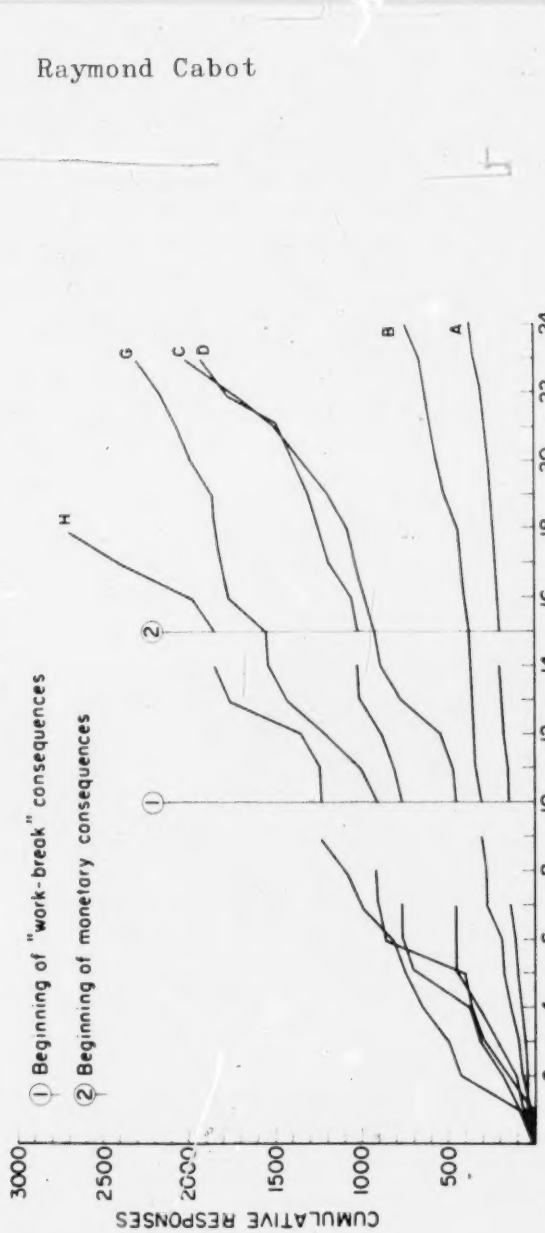

Figure 3. Cumulative units of work under conditions of refined work contracts and teacher reinforcement (sessions 1-9); work contracts, teacher reinforcement, and work breaks (sessions 10-14); variable ratio of monetary consequences added (sessions 15-24).

Condition 5A. This condition was as in Condition 5, except that a new teacher taught the class, which was resumed in a new location after a three-week break. The new teacher, female, acted much like the male teacher in Condition 5. The money payment ratio was decreased from 1:5 to 1:25 by the 21st session, in amounts of 1:8, 1:10, 1:15, and 1:20. Cumulative work curves are shown in Figure 4.

Subjects A,D,G, and H continued as before; C attended only twice weekly; B was placed in another class; and I and J, both boys aged 10 and 11, were added.

Performance was maintained throughout. There is some deceleration of J and H as the ratio of money to correct responses decreased, but the other curves maintained acceleration.

Monetary consequences were removed three days before the period was due to end, and thus the effects can only be surmised. However, curves A,D,I, and J do not seem to be affected; C had only one day of no money consequence; G and H increase.

Discussion

The data show considerable orderliness in that changes in consequences for performance influenced the amount of work performed.

Condition 1, lack of consequences for task behavior, resulted in a low rate of work. Within three weeks, this class (and others, operated under the same condition) gave the appearance of a

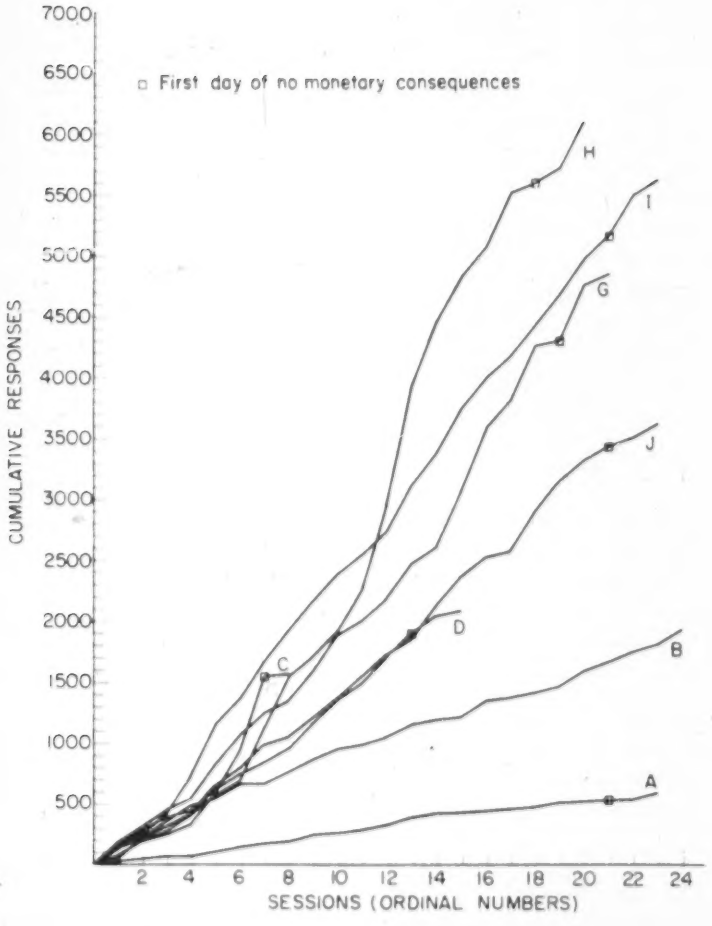

Figure 4. Cumulative units of work under conditions of work contracts, work breaks, teacher reinforcement, and variable ratio monetary consequences; no monetary consequences.

class for disturbed children.

Condition 2 resulted in work outputs comparable to normal classrooms. Upon completion of assignments, there was teacher approval. However, there was no punishment for rule infractions and the teacher was neutral about behaviors which were not task relevant. Although the work output under Condition 2 was higher than under Condition 1, no attempt was made to compare the two. The classes were not sufficiently comparable to be able to state with any confidence the reasons for differences. But rather than attempt to do further experiments to determine whether approval, small assignments, differences in the environment and children, etc., were affecting productivity rate, attempts were made to further increase productivity.

Condition 3, in which certain procedures were tidied up, was such an attempt. The data from this experiment show very definite changes in performance following changes in consequences. However, the extinction trends in certain of the subjects prompted the use of a more vigorous definition and implementation of the contract system and the work break. Condition 4 resulted again in work gains.

The introduction of money under Condition 5 and 5A again increased work rates at a sustained level. Removal of the money during the last three sessions was not continued long enough to determine whether or not the performance would have continued without it. However, the children were already routinely graphing the results of each

contract before counting their money. These graphs attained great lengths (four to six feet) and were sources of obvious pride to the children.

Although the conditions for these experiments were not ideal, that is to say, did not conform to the usual laboratory experimental designs, the changes in performance following changes in consequences were sufficiently close enough in time to indicate causality. Furthermore, conditions were such that they closely approximated those which would be found in a classroom. There is objection to the use of hard cash for school work, but that condition seemed to be effectively replaced by a point system. A later experiment in which only a point system was used, resulted in work curves quite similar to those resulting from Condition 5.

Conclusion

The solution to the problem of maintaining task behavior was found to be a simple one. The provision of feedback, in the form of points, as immediate as possible, was sufficient to keep a subject performing at high rates over an extended period of time.

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Raymond Cabot

Footnotes

1. Principle investigators in this research were D.E.P. Smith (senior researcher), D.M. Brethower, and R. Cabot. The research was in part supported under Contract OEC-3-6-061784-058, with the U.S. Department of Health, Education, and Welfare, OEC, Title VI, P.L. 85-864, as amended. This research is one of several submitted to the OEC as Studies in Language and Language Behavior, Progress Report V, September 1, 1967. Center for Research on Language and Language Behavior, the University of Michigan.

READING FOR THE MAIN IDEA: 1970 MODEL

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The "Reading for the Main Idea" program was initially developed in the late 1950's. In its early configuration, the program consisted of a series of panels with four instruction frames for each panel. The panels, containing one paragraph each, were presented on 5X8 cards. The first four panels taught a specific definition of "main idea", "too general", "too specific", and "irrelevant". The definitions taught in the early frames were the ones used throughout the rest of the program. The objective of the program was to teach a student to read a paragraph of college level material, avoid a response that was too general, too specific or irrelevant, but produce the main idea.

In the program, the "main idea" was a summary statement, condensing the topic sentence and appropriate supporting details. An adequate statement could be discriminated from one that was too broad, or too narrow, or contained irrelevant information. The skill appeared to be what a good student does during independent study; read a section and succinctly summarize the main point. A previous report (Raygor & Wark, 1962) demonstrated that the self-instructional program in its original form was able to produce significant improvement, measured by the paragraph comprehension

section of the Diagnostic Reading Test. Furthermore, the improvement was greater than that shown by a control group taught by more conventional group instruction.

A subsequent revision of the text was used to improve the reading skills of high school students. The results have already been reported (Raygor & Summers, 1963).

There was a long series of fundamental changes in the Reading for the Main Idea program before the current 1970 version. The actual interplay between test data and program revision is a complex one. It would be impossible to detail the myriad of small changes that were made, partly on the basis of empirical testing, and partly through increasingly sophisticated clinical hunches. This paper reports the results of the last evaluation on the program as it is currently available (Raygor, 1970).

Description of the Program

The Main Idea program trains the learner in understanding, recognizing, and writing the main ideas or central thoughts of paragraphs. The actual selections are taken from published college textbooks. The program has a simple organization: In Part I the learner gets instructions on how to use the program and is trained in the definitions of "main idea" and other important terms; in Part II he has practice in discriminating among statements which may or may not be the main idea of the accompanying reading selection; in Part III he continues the discriminations of Part II,

but at a more difficult level; and in Part IV he moves on to writing the main idea of the passages himself.

A tally card serves as a record of the student's achievement for himself or an instructor. Two progress checkpoints in the program allow the learner to skip over intervening sections if he has a high enough correct tally on his card. Thus the program provides a type of wash forward or express stop individualization which allows rapid students to progress at their best possible speed.

Final Test Sample

The 1970 version of the program was tested on a class of 164 juniors at St. Louis Park High School, St. Louis Park, Minnesota. This is an upper middle class suburban high school in the Twin City area. The students who used the program were participating in a formal research study, to be described later in the paper. As part of their English curriculum they had previously taken the Diagnostic Reading Test survey section. The results are reported in Table 1. They were obviously fairly competent readers before they used the program. Of the total 164 juniors, 121 completed the entire program.

How Long Did It Take to Complete the Program?

The high school students took on the average $2\frac{1}{2}$ hours to complete the program. This is slightly longer than we would expect a comparable class to take under normal conditions. The mean is somewhat inflated since the students

TABLE 1

St. Louis Park High School Juniors
Diagnostic Reading Test, Survey Section
N = 164

Rate	$\bar{x}$=332.7 σ =93.88*
Story Comprehension	$\bar{x}$= 15.43 σ = 2.87
Paragraph Comprehension	$\bar{x}$= 13.47 σ = 3.94

* 88 percentile, 1953 Norms

were instructed to work all the items, and not to wash forward at the checkpoints even if they were doing well. More precise statistics on the distribution of times are presented in Table 2.

TABLE 2

Time to Complete the Main Idea Program, 1970 Model. N = 121

$\bar{x}$=152.13 minutes
σ= 31.04 minutes
Mode=158 minutes
Range=68-258 minutes
$\bar{x}$ + 30=59.01-245.25 ∴ slight skew right

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How Many Errors Are Made By Each Student?

Student errors are an important parameter of any self-instructional program. Ideally error rate should be reduced to a minimum. The acceptable percent is a matter of some conjecture and debate among specialists. Some experts hold that 90% of a student sample should get 90% of the frames correct. Other programmers feel that the 90/90 criterion is too rigid. In general however, program authors strive for minimal errors consistent with evidence of teaching effectiveness. Of course the evidence of improvement is the ultimate criterion.

For evaluation of student errors, it is convenient to think of the program as divided into three parts. The first twenty-five items constitute Part I, and teach the definitions of "main idea", "too general", "too specific", and "irrelevant". It was made quite easy. Errors are indicators of carelessness rather than lack of learning. Part II, items 26 through 50, teach the student to apply these definitions in progressively more difficult paragraphs. Part III, items 51 through 226, drill the students in applying these basic discriminations between the various possible types of summary statements. The error rates per student associated with Parts II and III are presented in Table 3.

What Was the Error Rate By Types of Discrimination?

Some types of discrimination were not

TABLE 3

Error Rates Per Student by Parts,
Main Idea Program, 1970 Model
N = 121

Part II	(Items 26-50)	$\bar{x}$=14.04 σ=6.66
Part III	(Items 51-226)	$\bar{x}$= 5.87 σ=3.38
Total	(226 Items)	$\bar{x}$=19.67 σ=8.97

taught as well as others. It seemed that students were able to spot an alternative that was irrelevant, but they had twice as much trouble identifying one that was too specific. Clearly that was one type of discrimination that needed some revision.

Table 4

Error Rates by Item Type,
Main Idea Program, 1970 Model
N = 121

Main Idea	$\bar{x}$=3.00	σ=2.21
Too general	$\bar{x}$=3.71	σ=2.31
Too specific	$\bar{x}$=4.61	σ=2.64
Irrelevant	$\bar{x}$=2.72	σ=2.17

What Was the Error Rate on All 226 Items?

One item was missed by 49% of the

students. On the other hand, 2/3 of the items were missed by less than 10% of the students. The actual tally and percentage of error, as reflected in the cumulative percentages are presented in Table 5. Based on this analysis, 33% of the items were revised prior to publication.

TABLE 5

Error Rates by Number of Items Missed
By Various Numbers of Students,
Main Idea Program, 1970 Model
N = 226 items, N = 121 students

1 item (0.4%)	missed by 60 or more students (49.5%)
2 items (0.8%)	missed by 50 or more students (41.3%)
9 items (4%)	missed by 40 or more students (33.1%)
27 items (12%)	missed by 30 or more students (24.8%)
75 items (33%)	missed by 20 or more students (16.5%)
151 items (67%)	missed by 10 or more students (8.2%)

What Do Students Think About the Program?

The students in the St. Louis Park High School sample were asked to fill out six evaluative scales after completing the

program. A second group of twenty students from the University of Minnesota, and a third group of nineteen students from Chabot Junior College in California also filled out the scales after working through the program. In general, the junior college and university students were more supportive of the program than were the high school students. This support may be due to the fact that college students were volunteers in the course in which they used the program, while the high school students were required to use the program, even though they may not have wished to. The six evaluation scales and the number of students in each sample selecting each point on the scale are presented in Table 6.

Summary of the Foregoing Analysis

The last pre-publication revision of the Main Idea Program was based on the results of a slightly above average group of high school students who took $2\frac{1}{2}$ hours to complete the program as part of their English course. The analysis would suggest that learning does take place, since the percentage of error drops precipitously from the second to third part of the program. Seventy-five items were totally revised for the final released version. The effects of this revision on total time and error of course cannot be reported. Those results must await further field testing in the future. In general however student attitude toward the program, both by the high school and college students, seem positive. A question remains; how well does the program teach?

What Was the Criterion of Effectiveness?

The criterion for evaluating the effectiveness of the program was a sixteen item instrument composed of the main idea items from the Survey Section of all forms of the Diagnostic Reading Test--Upper Level. In the eight parallel forms of the test there are thirty-two such items. These items were presented in scrambled order to psychology students at the University of Minnesota in order to obtain an empirical difficulty level for each item. On the basis of those indices, the thirty-two items were divided into sixteen item tests of empirically equal difficulty. One set was designated Form A, the other Form B.

What Was the Experimental Design?

The Reading for the Main Idea program was tested in a pre/post experiment using the Solomon 4-group design. The design, described by Stanley Campbell in the Handbook of Research on Teaching (Gage, 1963), had been used only rarely in reading research (Wark & Kolb, 1967). The design controls for fundamental sources of invalidity--the alternative explanations which might be offered to explain any treatment effect. A thorough-going technical analysis of the design is presented in the Handbook.

In the present study, students were assigned randomly in class units. Group I was a complete class of students, of whom half took Form A as the pre-test, and half took Form B. Then they worked through the program and took the

TABLE 6

Evaluation of the Main Idea Program, 1970 Model
By Three Groups of Students:
Chabot Junior College N = 19
University of Minnesota "How-to-Study" N = 20
St. Louis Park High School juniors N = 110

1.	I feel my time spent on this program was					
	Chabot	3	6	9	0	0
	U.of M.	2	11	7	0	0
	St.L.P.	1	18	54	25	10
		used very profitably	well used	adequately spent	poorly used	largely wasted
2.	I looked ahead before I wrote my answer					
	Chabot	2	7	9	1	0
	U.of M.	5	12	3	0	0
	St.L.P.	8	41	48	10	4
		on no occasion	rarely	sometimes	often	nearly every time

3. I was sure of my answer

Chabot	0	12	7	0	0
U.of M.	0	14	6	0	0
St.L.P.	4	51	45	5	2
	nearly every time	most of the time	sometimes	seldom	almost never

4. The explanations in this program are

Chabot	4	8	7	0	0
U.of M.	1	12	5	2	0
St.L.P.	11	32	49	16	3
	excellent	good	acceptable	inadequate	totally inadequate

5. The instructions in this program are

Chabot	7	7	4	0	1
U.of M.	3	14	2	0	0
St.L.P.	20	48	30	8	3
	excellent	good	acceptable	inadequate	totally inadequate

6. If this test were available in the bookstore, I would recommend other students

Chabot	11	6	
U.of M.	6	13	
St.L.P.	15	55	
	buy it and use it	borrow but don't buy it	avoid it completely

alternative form as a post-test. Group II was another intact class which took the pre- and post-tests, but had the classroom sessions on poetry interpretation instead of using the program. Group III did not take a pre-test. They merely worked the program and then took the post-test. This of course is a control group to evaluate any possible effects which might be derived from exposure to the items on the pre-test. Group IV took neither the pre-test nor the program. They merely took the post-test on the day the other classes took it. Group IV is a control to measure the effects of both pre-testing and the treatment program.

How Are the Data Analyzed?

In the Solomon 4-group design, the usual procedure is to perform an analysis of variance on the eight sets of post-test scores. The main effects in the analysis would be treatment/ no treatment; Form A/ Form B; pre-test/ no pre-test. The design makes it possible to decide whether any of the main effects or any of the interactions could account for the results. Means and analysis of variance are presented in Table 7.

We notice that both the treatment groups have higher post-test means on both forms of the test regardless of whether they took the pre-test or not. The only significant effect was due to the program treatment. There is no significant effect due to either the test or lack of it, the form of the post-test, or any of the interactions between the variables. Thus we must conclude that the program, for at least that group of students,

TABLE 7

Design, Means and ANOVA for the
Evaluation of the Main Idea Program, 1970 Model

Criterion Test:

Thirty-two items testing main idea of paragraphs. Items taken from DRT and arranged into Forms A and B of empirically equal difficulty.

Design:

Group I	Pre-test(A or B)	Program	Post-test(B or A)
Group II	Pre-test(A or B)	Poetry Control	Post-test(B or A)
Group III	X	Program	Post-test(A or B)
Group IV	X	X	Post-test(A or B

Means:

Treatment(I & III)		No Treatment(II & IV)	
Pre-test(I)		Pre-test(II)	
Form A	$\bar{x}$=11.22	Form A	$\bar{x}$=8.33
Form B	$\bar{x}$=11.66	Form B	$\bar{x}$=8.82
No Pre-test(III)		No Pre-test	
Form A	$\bar{x}$=11.56	Form A	$\bar{x}$=9.43
Form B	$\bar{x}$=11.92	Form B	$\bar{x}$=9.40

Analysis of Variance:

Source	SS	df	F
Treatment	13.42	1	31.95
Form	.19	1	
Pre/no pre-test	.65	1	
Treatment X Form	.06	1	
Treatment X pre/no pre-test	.19	1	
Form X pre/no pre-test	.04	1	(F,Sig.
Treatment X Form X pre/no pre-test	.00	1	.01 for 1,200df=6.76)
Within (error)	67.66	160	

was very successful in improving the ability to read and recognize the main idea.

Summary

The present version of the Main Idea Program is by no means the last to be available. It is the result of careful field work going back a good many years. Doubtless there will be future changes, but the current program seems to have a reasonably low error rate and demonstrate reasonably high effectiveness. It is apparently well tolerated by students. It certainly would be a program worth investigating in a college reading center.

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THE LAST TWO R'S:
A RESEARCH VIEW

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This discussion of the last two segments of the SQ3R procedure will incorporate three major aspects: 1) a brief background of the process, 2) some minor disagreements with and clarifications, in light of my biases, of Dr. Robinson's presentation in his most recent revision of the book. Effective Study (Robinson, 1962), and 3) acceptance of a challenge offered in the Robinson book inviting further refinement of the reading and study process he has advocated.[1]

Before I go further let me commend Dr. Robinson's book, Effective Study, to you. The book presents an unusual educational phenomenon in that he has not only outlined an innovative procedure, but has also attempted to present some research evidence to substantiate the worth of his procedure. In an age when publication often precedes experimental use and research of new materials and procedures, this horse-before-the-cart approach is quite refreshing.

First, what is SQ3R? The book, Effective Study, refers to the process as a higher-level reading skill and finally on page 31 reveals what the mnemonic label SQ3R stands for. The student is instructed to tackle reading assignments by first SURVEYING or previewing the headings and final summary, and then

[1]See Dr. Robinson's article in this Yearbook (Editor's Note)

phrasing a QUESTION based on the headings of each section before READING. After reading, the first R, the student is instructed to perform two more tasks, RECITE and REVIEW, the last two R's.

The S, Q, and first R provide little problem to understanding or instruction. Getting students to understand the mechanics and perform these first three steps is in most cases easily accomplished. Especially with the help of the many specially constructed materials for teaching the procedure, students usually can quite quickly demonstrate proficiency in the first three-fifths of the process. The trouble usually doesn't begin until the student is expected to perform the procedure on his regular textbooks which are not as clearly amenable to the process as were the specially prepared training exercises.

Perhaps this problem is due to the fact that teachers have overlooked a direction, given by Robinson in his text and also in the manuals of most materials using the SQ3R approach. This direction concerns teaching for transfer. Most training programs suggest that once the basic process is mastered in the special training materials, practice should be carried out in actual school course materials. Moving the student from the level of proficiency with special SQ3R training materials to the level of automatic use of the process in his study with course materials does not seem to have been accomplished in most cases. At least this is the indication I have gotten from my own teaching experience and the comments of both teachers and students. Most high school

students and many junior high school students, whom I have met in reading clinics and other remedial and corrective settings, report knowing about SQ3R. The knowledge is usually mostly verbal and not operational. All in all, I feel we have greatly underrated the amount of training necessary to make the simple sounding SQ3R procedure a study habit for students. To illustrate this I would like to report the results of one training study with college students which continued until it was determined that the students were actually functioning in the SQ3R study method.

Previous Research

Ljunberg Fox (1962) reports a pilot study in which he trained college students to use the SQ3R technique in studying their college courses. Before attempting to teach the students the SQ3R process, several weeks were required to form the habits of adhering to a time and place schedule for study. This began with setting up a specific time and place for the study of a single course. The student was then instructed to go to the chosen room at the designated time, begin to study, and leave to join his friends for coffee or meet his girl-friend as soon as he began to feel discomfrot or daydream. The only condition given was that he was to finish one more page prior to leaving. This amount was gradually increased until the student was remaining at study for the entire allotted time segment. In fact, after one week there was no problem with the students desiring to leave. The experimenter theorized that by making the desires to spend the time on social

activities legal, the students no longer viewed having to forego the fun activities for study as aversive.

Once the student was successfully spending the allotted time segment on the study of one subject, another subject was added. For each subject a different time segment and a different study location was selected. After several weeks all of the students involved had successfully adopted the study schedule set up for them. The next stage was to introduce measures to make the students more efficient in their study procedures. (Up to this time their efforts had been limited mostly to reading assigned work or solving mathematical problems.) The efficiency procedure chosen was Robinson's SQ3R method. The same gradual approach used in the initial phase of the experiment was employed to develop the SQ3R technique as a study habit for the students involved.

The first step was to explain how to survey and discuss the purpose of the procedure. The students were then instructed to spend the first minute of each study session surveying the material to be read or worked on. When surveying became routine, questioning was introduced. At first only one question per bold face heading was required but gradually more and more questions were required. Once both survey and question procedures were habit, work was begun on developing the reading step. Here a time limit was given for each five pages. This limit was gradually reduced until a fair, but not excessive speed was reached. The next step, recitation, was begun by instructing the student to sit, literally,

on the book. He was to then recall all that he could in one minute. This time was increased to three minutes over a period of days. The recall was produced in the form of outline notes. At last the final step was introduced. This was first limited to having the student check his notes with the book to be sure that items in his notes were correct. After he was comfortable with this aspect he was instructed to also check for omission of details in his notes. Thus, after nearly a full quarter or about twelve weeks of daily visits of approximately five minutes each with a counselor, students were, in fact, able to and did function in the SQ3R mode of study as a matter of habit.

A check-up during the following quarter found all of the subjects still in college, and all demonstrating significant improvement in their work. The smallest rise in grade average was one letter grade. Not only had their work improved but they now were able to accomplish all of their study in the daytime and have weekends and evenings free. The students also reported continuation of the procedures in which they had been trained.

Present Study

The success of this study and the time required to produce that success give rise to two possible conclusions. One might say that the length of time required was merely due to the "typical" slow southern way. On the other hand, the time required might also lead us to question the adequacy of the usual single lesson with a couple of practice sessions

provided by most sources for training students in the SQ3R method. I choose to ask you to doubt the idea that the length of time has to do with the southern metabolism and rather think of this evidence as indicative of our having underrated the difficulty of training students to the habit level in the use of the SQ3R technique.

One of the difficulties in training students in the SQ3R technique, besides the basic problem of getting them to devote time to study, is the lack of specific procedures for accomplishing the last two R's, recite and review. It is this segment of the process that I wish to deal with in presenting an idea for further refinement and, in my opinion, increasing the teachability of the SQ3R procedure.

In a study recently concluded, I compared four notetaking procedures (Palmatier, 1968). The results of the study indicate that one of the procedures is easier to teach students and yet, at the same time, their learning achievement from the notes and the quality-of-note is at least equal and usually better than with the other methods tested. In addition to these attributes the procedure also contains the basic elements of the last two R's. By using this notetaking procedure as the recite step and then continuing with the study procedure which is recommended for the notetaking method, the review step is built-in. Besides simply providing a means for accomplishing the recite and review processes the method offers the student an easily followed and highly structured framework for his work. Let me describe the procedure and discuss the theoretical and practical

aspects which make this, in my opinion, a worthwhile addition and refinement of the SQ3R process.

The notetaking procedure is referred to by those who use and advocate it as the active method for studying. You will see the reason for this later when I discuss the study procedure. The system requires that loose-leaf notebook paper be used and that notes be limited to one side of the page. In addition a three inch margin is necessary. This can be achieved by purchasing legal-line paper which has such a margin printed or by running regular notebook paper through a ditto machine to add the extra margin.

Notes are written only on the right hand side of the margin. Students are directed to use their own style but advised that two elements are responsible for much of the difference between good and poor notes. These elements are space and indentation or subordination. The most useful notes for studying contain a high percentage of space so that the information is set forth in an easily accessible manner. Students are told to skip lines between thought or topic units. The greater the change of thought the more space is left. Indentation following the first line of a statement is used to indicate that the thought has not changed and to illustrate subordination of supporting details.

Other than these directions students are told only to keep notes brief and use abbreviations and symbols to cut writing time. Keeping a glossary of these abbreviations and symbols at the front

of a set of notes is helpful, especially when referring back to notes after a long time lapse.

To conform with the SQ3R procedure's definition of recite, the student would make his notes after completing the reading of a section in his text. Preferably the work would be divided into thought units rather than into chapter segments.

The next step of the notetaking procedure, like the next step of the SQ3R process, involves review. The student goes over his notes in the right-hand column and selects the major aspects and writes labels for these in the left-hand column. The labels should be written so that they serve as cues to the information in the right-hand column but do not repeat factual data. This step requires the student to go through an analysis and synthesis process which, in fact, is the first step in his learning of the material. This much of the notetaking procedure covers both of the last two R's of the SQ3R process. The idea of checking to see if the notes are correct and complete can be used as easily with this notetaking technique as with any other procedure. The notetaking procedure does not stop here however, but has provisions, unlike the SQ3R process, to carry the student on to that evaluation of his study skills, the all-American exam.

The study process involves doing the same sort of activity as will be used to measure learning. This activity is testing or rather the answering of questions. The student does not merely

read over his notes. Instead he tests himself to see how much he knows. A quote from Robinson seems to have been written with this sort of method in mind; "An axiom in preparing for a task is to practice it the way it will later have to be done." (p. 24, Robinson, 1962)

This self-testing is accomplished in two ways--one procedure for objective type questions and another for essay type questions. For both types of study the student is told to lay out his notes so that the right or note portion of each page is covered by the succeeding page. This leaves only the labels in the left column showing. A long table, or better yet the floor, is a good place to set up for this portion of the procedure.

The labels are used to serve as question stems. The student attempts to recall the details for which the labels stand. If the test he is studying for is to be of the objective variety the work should proceed on the horizontal. This puts the questions out of order and thus out of context as they will be on an exam. Once a page of notes has been learned it is pulled out and no more time is spent on it. This places the emphasis on the hard to master material already mastered.

If the test being studied for is to be of the subjective or essay type, a different procedure is used. For this type of test the student works vertically surveying his notes for units of material upon which essay questions might be based. By then making up questions and writing trial answers, students

often feel they have already seen the test when it is finally administered.

Thie notetaking procedure, by the way, is amenable to taking both reading and lecture notes. Besides the fact that it works as a recording and learning process, there is an added bonus. Note-taking usually is greatly improved. During the label writing step, students are able to see how much surplus and often superfluous material they have written. With each succeeding note-taking session they tend to reduce this surplus.

My findings that this method is the easiest of those tried in which to instruct students, and the fact that it incorporates and goes beyond the final 2 R's of the SQ3R process, seem to me to make it appropriate for incorporation into the SQ3R technique.

In summary, let me reiterate that I feel we have underrated the difficulty of training students in the SQ3R habit. We have too often been satisfied that their regurgitation of the how's and why's of the SQ3R process was indicative of their having acquired this "higher-level reading skill." The fact that they did not apply the newly acquired skill was usually considered to be due to that perverse nature of students known and used as an excuse for poor teaching by many members of our profession. My experience, and I suggest that yours also, does not allow the assumption that we have really trained students in the SQ3R procedure. If the experiment by Fox is indicative, we have not devoted nearly enough time and effort

to training the SQ3R habit. In addition to spending more time, I have advocated a refinement which puts the SQ3R process more in focus with the goal required of students--passing tests.

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TEST PANIC, DAYDREAMING AND PROCRASTINATION

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In this paper I would like to discuss much more than the three vexing problems of test anxiety, daydreaming, and procrastination. Rather, to state my point as clearly as possible, I want to discuss what seems to be a single process with at least three troublesome manifestations. It will be suggested that these common student complaints are the outcome of a single mechanism. I'll try to outline the mechanism and show ways in which the problems can be treated.

Basic Mechanisms - Test Panic

Let's start with the situation of test panic. Imagine a student sitting more or less quietly in a classroom. If he's a "normal" student with reasonably typical upbringing, grades on examinations are important to him. They may represent the cost for parental approval, a ticket of admission to graduate school, the criterion for acceptance into a favorite fraternity, or some other important necessity of life. In any case, regardless of how he got that way, failure is unpleasant for this hypothetical student. Let us assume that the teacher has passed back the mid-quarter examinations, and that the young scholar has just seen his grade of F! What happens? If observed carefully, his muscles may seem to tense up, especially those around his throat and jaw. His pupils dilate, his pulse quickens, his

blood pressure goes up, and his palms begin to perspire. In summary, he may show an integrated set of responses which taken together characterize anxiety or panic.

Now suppose the student is sitting in the classroom and the instructor announces a surprise quiz. Two things might happen. First, right after the teacher's announcement all the physiological signs of anxiety might be observed. Second, the student might report some interesting psychological symptoms. He might say, "I feel butterflies in my stomach," "I can see where the answer is in my notebook, but I can't read the page," and almost plaintively, "Last night I knew everything, but when I looked at the test my head went empty." After the test he will say, "Every answer came back when I turned in that darn answer sheet." These two phenomena, the signs of anxiety and the symptoms of temporary forgetting and spontaneous recovery, define what I mean by test panic.

It is beyond the scope of this paper to list all of the potential variables that could conceivably account for test panic. The situation will be different depending on what student one talks to. In one case, childhood training about academic achievement may be the critical variable. In another the genetic make-up of the parents, in a third social class, in a fourth case birth order may individually or in combination be the significant factor. But it is probable that in all of these variables there is one factor which is common to test panic--an exam which the student failed. Failure may not be defined by an F. It may be a matter of failure as it is interpreted

by the student. That is, a particular student may feel as if he had failed regardless of the actual grade. The historical causes of test panic are irrelevant. As a matter of fact, they are also unknowable. It is practically impossible to go back and VALIDLY pinpoint the source of a student's panic. It is sufficient for the purposes of this paper that a student has taken an exam and has experienced panic. Now let us extend the analysis to the vexing problem of daydreaming.

Basic Mechanisms-- Daydreaming and Procrastination

Let us imagine the student comfortably seated in front of a book studying for a course which he does not particularly enjoy. He is relaxed and studying reasonably well. For present purposes, it is assumed that he has had some of the previously mentioned unpleasant feelings with exams. That is, he has experienced test panic. As he is studying he thinks about an upcoming examination. What happens? He begins to speculate about that exam and to think about possible questions. He also thinks about the possible outcome. Note that just thinking about the exam and its outcome may elicit some of the responses of panic which he has made in the past. He might become tense, his stomach may contract, his eyes dilate, and his palms begin to perspire. In short, he begins to experience a mild case of exam panic merely from thinking about the test.

Unfortunately, the very book he is studying will become associated with the

panic reaction. Previously the book was something pleasant or at least something neutral. But now, by the process of stimulus generalization, the book, the desk, and in fact the whole study environment becomes a stimulus for a mild panic response.

Now let's engage in some frankly anthropomorphic speculation. What does one do when confronted with an object that for one reason or another has become mildly unpleasant? It need not be a book. It could, for example, be the neighbor's small dog whose presence at a backyard party has become all too obvious. How would a reasonable person react? By leaving the party as soon as was reasonably convenient. And what about a book that becomes unpleasant? By analogy it might be expected that the student will leave the book as soon as possible. He might physically get up and go to the ice box for a snack, or go out to the lounge for "a quick smoke break." Faced with a textbook which has become unpleasant, he might be expected to do anything that gets him physically away from the book, the table, in fact the whole study situation.

Let us summarize the argument to this point. The beginning hypothesis was that test panic is based on failing an examination. Every time the student thinks about that failure he experiences some of the physiological components of that panic. Then in the future when he is studying, he thinks about an upcoming exam. The entire physical surroundings, including the book and table becomes associated with feelings of panic and unpleasantness. The

student attempts to reduce that feeling of tension by physically leaving the presence of the stimulus, his study area. Short of leaving physically, he may leave psychologically by daydreaming. This last is, of course, frightfully speculative. It depends on some probably unprovable assumptions about the effect of fantasy. But at least it does offer an internally consistent analysis of daydreaming. What about the problem of procrastination? If the assumption is made that a textbook, or in fact, an entire environment can become a source for anxiety, it takes only a small further step to explain procrastination. A student who knows from past experience that his study desk makes him uncomfortable will, reasonably, avoid approaching that desk. After all, what "normal" person is going to do something that he knows from past experience will be unpleasant? All of us have seen students who have somehow managed to squander away hours and hours of their potential study time. These people are diagnosed self-destructive, lacking in will power, or just plain lazy. Parents and counselors often behave as if putting a label on a student would in some way change his behavior. Tragically, some students even label themselves as lazy. On the surface they even smugly seem to suggest that the label has solved their problem. I would like to suggest that these students may be suffering from "academic anxieties." The great advantage of labeling them that way, pompous as it sounds, is that it suggests ways to treat the problem, ways not suggested by the garden variety title "lazy."

David M. Wark

Treatment Methods

The basic treatment strategy is to arrange things so that when the student is thinking about studying or taking an exam, he no longer becomes tense and panics. There are two possible ways to arrange for that desirable outcome. One is to force the student to confront his books. This approach usually involves a strict study schedule or attendance at a required How to Study course. Frequently, the student is subjected to a sermon designed to strengthen his resolve and will power. In its crudest form, this moralizing is completely unconnected to any constructive guidance in improved study methods. There is some evidence that required skills courses work for college students on academic probation (Blake, 1956). However, the programs were not uniformly successful. It is interesting to speculate whether the students for whom a straight skills approach did not work are the very ones who were suffering from what I have chosen to call academic anxiety.

The second approach to treating any of the manifestations of school anxiety is to teach a new response to the book, or test, or study room--a response which counteracts the physical tension of anxiety. This approach does indeed work. It has been most widely described by Joseph Wolpe. He writes:

> If a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by a complete or partial suppression of the

> anxiety responses the bond between the stimuli and the anxiety response will be weakened (Wolpe, 1969).

Wolpe points out that relaxation is antagonistic to anxiety. A deeply relaxed person cannot be anxious. The muscular tension of anxiety and the muscular calm of relaxation are incompatible. They cannot both occur at the same time in the same person. Thus, a person relaxed in the presence of an anxiety provoking stimulus will not experience anxiety. The first step then in overcoming test anxiety, daydreaming, and procrastination is to teach deep muscle relaxation.

It may not be sufficient to tell a student simply "now relax completely." The very students who are in most need of that advice are often least capable of applying it. And paradoxically, the anxious student is frequently aware of the fact that he is tense. But he doesn't know how to change. It is necessary, therefore, to have him learn relaxation by experience, not by command. This is accomplished by having a student tense his muscles, say those in the hand, wrist, and forearm. He is to notice the feeling of tensions in his arm. Then he is to relax those muscles slightly and hold it. Then he is to relax a bit more and hold it. He is to proceed in this stair-step fashion from tension to complete relaxation. He is told to continue relaxing beyond the point of relaxation. Then he is told to let every muscle fiber soften up and relax. It is this stepwise relaxation, going metaphorically "down the stairs into the basement" that

makes this type of relaxation effective. Gradually the alternate tension and relaxation is applied to every muscle in the body. After several lessons students can begin to relax their entire body quickly and on their own command. For a more complete description of the method, and a script to produce relaxation, see Wolpe and Lazarus (1968).

The next step, once the student can relax sufficiently, is to help him associate that relaxation with a book, test, or a study situation that is producing some anxiety. Wolpe employs a desensitization hierarchy or list of increasingly unpleasant situations. The bottom item in the hierarchy is one which produces very, very little anxiety when the student is asked to imagine it. The top item in the hierarchy is the test, a book, or an examination which is extremely frightening. Fortunately, there is evidence that a student need only think of an anxiety provoking situation, while he is relaxed, in order to reduce the emotional effect of that situation. But it is almost never sufficient to have the student relax and picture the top item in his hierarchy. Rather, he has to work up to it, starting with the least frightening situation and progressing.

Let me, by way of illustration, consider a potential hierarchy for a student who panics when he thinks about studying for an exam. He is first taught to relax. Then I ask him to imagine himself studying at a desk two weeks before an exam. If he feels any tension in that situation, he is directed to stop imagining himself studying and to relax

the muscles where he is conscious of tension. Then he returns to imagining himself in the studying situation. When he can see himself two weeks before the exam with no tension, he is asked to imagine himself one week before the exam. Again, if he experiences any tension he is to stop imagining the scene and reduce the tension in the muscles that are tight. Eventually, he will comfortably be able to picture himself before the exam and be quite relaxed. It is important to note that this is not a guaranteed method to produce higher grades. If the student has not studied and does not know the material, he will probably still get a low grade. But by using this technique he will probably be able to relax sufficiently so that he can study.

Emery and Krumboltz (1967) demonstrated the effectiveness of relaxation and desensitization for test anxious college students. They found that students who were desensitized for test panic rated themselves less anxious about examinations and got slightly higher grades than equally anxious control group students who were not desensitized.

Laxer, Quarter, Kooman, and Walker (1969) report a study of therapy for test panic among high school students. They attempted to separate the effects of pure relaxation from the effects of the desensitization procedure using a hierarchy of increasingly painful situations. Their twenty-two item hierarchy went from "going into a regularly scheduled class," to "having to tell your parents you failed." They found that the relaxation alone was more

effective in reducing manifest anxiety than the systematic desensitization plus relaxation. However, only in grade 13 students was there a trend toward improved academic performance. Thus the results of these studies would suggest that something about the relaxation or desensitization procedure will certainly reduce the anxiety regarding test and have, in some cases, beneficial effects on grade point average.

What about the treatment of procrastination? The analysis of this problem suggests that students who do not study are avoiding an unpleasant task. The most direct way to approach the problem would seem to be to desensitize by using a time hierarchy. That is, sufferers would first see themselves seated comfortably in the living room two hours before studying. Then they would see themselves half an hour before studying. Eventually they would see themselves in successive scenes walking toward their study room, going through the door, approaching the desk, sitting down before a book, beginning to study, then reviewing their notes. The last step would be to see themselves leaving the room after a satisfying and effective study period.

Anxiety in the classroom may be another manifestation of the basic process. Students who feel extremely uncomfortable in the classroom, afraid to approach other students and make social talk or ask for help, afraid to raise their hand and volunteer an answer when the professor asks a question, afraid to ask a question when they do not understand something, afraid to approach the professor after class individually--these students show

a type of behavior that may be related to the fundamental mechanism I have been discussing. It might be suspected that the student was at one time made to feel foolish by the answer he gave in class. Then in the future any situation that requires talking in class reinstates the old responses. And of course merely thinking about that possibility brings the old feelings to high strength. If such is the case then some type of relaxation and desensitization might be helpful.

I have presented two studies which demonstrate that desensitization may be useful in reducing test panic. Unfortunately, there does not seem to have been a study which evaluates the effects of desensitization in combination with directed instruction in study skills. There is, as far as I know, no literature on the use of desensitization to treat the problems of concentration, procrastination, or classroom anxiety.

Classroom Applications of the Treatment Method

In introducing the procedures to students, I have found it useful to generate interest by asking how many of them suffer from procrastination, daydreams, and test panic. In any group, most will reply in the affirmative. The students are then given a brief lecture on the basic mechanism, and the effects of tension. Then they can be given the initial lesson in relaxation. I have found it practical to put the entire relaxation routine on a twenty minute tape recording. Toward the end of the period, the concept of a problem hierarchy is presented. The artificial examples

presented in Table 1 are used on any overhead projector to illustrate the concept.

TABLE 1

Model Problem Hierarchies

		Test Anxiety	Talking Anxiety
	100	Fail a final	
	90		Give verbal report
A	80	Enter test room	
N			
X	70		Ask Prof a
I		Wake up day	question
E	60	of test	
T			Ask student
Y	50		
S	40		
C		Study text	
A	30		Answer Prof
L			
E	20		
		First lecture	
	10		
			Say hello
	0		

As a homework assignment following the first relaxation session, students are requested to prepare their own hierarchy of anxiety provoking items. On succeeding class sessions students can be given practice in relaxation as a group. Then, either as a group or individually they can be given practice in desensitization.

Time and space preclude any discussion here of the clinical and theoretical issues involved in establishing a hierarchy. Nor shall I take up the technique of establishing subjective units of discomfort to each item on the scale. These issues are covered quite thoroughly in Wolpe and Lazarus (1968) or Wolpe (1969).

Data on Effectiveness

There is unfortunately no consistent body of literature which totally validates the fundamental conditioning mechanism which is proposed here. However, one group study and an individual case can be offered to give the flavor of what might be done.

In one section of a How to Study course 22 students were given the kind of orientation described in this paper. That is, they saw the model problem hierarchies presented in Table 1, and were given a homework assignment to prepare their own hierarchies using those items on the model, but putting them in their individually effective sequence. They were to assign each item a hypothetical scale value from 0 to 100, the high end being extremely anxiety provoking. At the next class session they returned with their hierarchies. The results, from three subjects are presented in Table 2. The students were then requested to select one scene which would be desensitized in class. (In Table 2 that scene is indicated by a circle around the pre-relaxation scale values.) Then the entire class was given the relaxation tape as a group. Following the relaxation exercise,

which took twenty minutes, they were instructed to see the scene three times interspersed with instructions to relax. At the end of this exercise they were requested to rescale their criterion scene. The figures at the bottom of Table 2 show, for the three subjects illustrated there, a drop in anxiety hierarchy values. For the nineteen students who completed the exercise, the mean pre-relaxation score was 39. The mean post score was 19. Thus the average drop was twenty points on the subjective anxiety scale.

These results should not be taken as compelling evidence for the effectiveness of relaxation and desensitization. The data are consistent with theoretical expectations and are of course gratifying. But the real impact of the study is to demonstrate in a group situation that it is possible to set up individual hierarchies and teach students to desensitize themselves. The two published studies reported dealt with test anxiety and only with one hierarchy for the entire group. In this pilot study reported here, nine students worked with the "talking in class" hierarchy, five worked with the "concentration" hierarchy, and five worked with the "test anxiety" hierarchy. On the basis of a few attempts at Minnesota, it appears that a generalized hierarchy tape can indeed be made which can then be used to desensitize a number of different problems. The possibilities for work in groups is quite intriguing.

I also wish to report a very successful individual case. Juanita appeared to have a great deal of trouble talking

TABLE 2

Hierarchy Changes After One Group Session

100 -		Fail 100	
	Fail 90		Report 90
		Study 80	
		Test day 70	
		Test room 60	Answer Prof (60)
50 -	Test day 50		
	Study (30)		
	Test room 25	First lecture (25)	Ask Prof 20
	First lecture 15		Ask student 10
0 -			Say hello 0
POST RELAXATION	15	0	20
DIFFERENCE	15	25	40

TABLE 3

Talking in Class Hierarchy--Juanita

Original Hierarchy	Anxiety Scale
1. Not understanding	5
2. Did not study for assignment	10
3. Embarrassed not knowing answer in class	20
4. Not taking part in class discussion	40
5. Study for test--not meaningful	70
6. Blank test day	90
7. Failed test	100

Derived Hierarchy

1. Only professor present when you raise a question
2. Students present when you raise a question
3. Only professor present when you can't answer a question
4. Students present when you can't answer a question

Date	Class Behavior	Relaxation Session
4/7	X	See self answering question. "It was child's play"
4/14	Answered general question to class. Raised hand.	See self raising hand, asking question. Know answer.
4/21	Asked question with known answer. Raised hand.	1. See other students in room--PANIC.
		2. See self raising hand and asking. Know answer.
		3. See self raising hand and asking. Unknown answer.
4/28	X	X
5/5	Asked questions with known answer. Raised hand.	X
5/12	1. Volunteered comments twice.	X
	2. Asked questions twice. Answers not known. Raised hand.	
5/19	Asked questions. Answers not known. Raised hand. No blush.	X
5/28	Volunteered comments twice. Evaluation of instructor. Did not raise hand. Did not blush.	X

in class. On the first night of class she did not answer with more than a barely audible whisper and had deep facial blush when her name was called in the roll. She appeared to be experiencing a great deal of discomfort in the class on successive evenings. Initially she submitted a hierarchy of 7 more or less unrelated but painful experiences having to do with school. (They are presented in the top part of Table 3.) Later in individual counseling she redefined them to the four presented in the derived hierarchy in Table 3. These were the items presented to her for individual desensitization following class hours on April 7, 14, and 21.

As part of the treatment Juanita was told that at no time would she be required to answer a question in class discussion. However, if she raised her hand she would be immediately acknowledged and allowed to answer. Note that in the relaxation sessions she was to picture herself asking questions for which she knew the answer or answering questions which she knew. At the third session she was to see herself raising her hand and asking a question that she could indeed not answer. Notice that on the first night of her classroom behavior recorded, the 7th of April, she showed no relevant asking or answering behavior. However, by the 28th of May, not only did she answer questions, but twice volunteered comments which included an evaluation of the instructor. She made these evaluations unblushingly and unbidden. This was a tremendous improvement for her.

There are of course other techniques

besides relaxation and desensitization that can be used for the treatment of test anxiety, procrastination, and daydreaming. They include, but are certainly not limited to, time contracting and the careful self application of rewards or punishments (Wark, 1967). One should of course not overlook the possibility that students are merely ignorant of the techniques of studying. Thus they may profit markedly from some directed counseling on the techniques of studying. But those other techniques are beyond the scope of this paper.

Summary

In this paper I have attempted to integrate three vexing problems that face a reading and study skills counselor. It has been assumed that emotional conditioning regarding study may have its roots in pre-school years. But it certainly continues well into the college experience. At any time during a student's education, the unpleasant emotional results of failing a test may become quite troublesome. The feelings of tension and anxiety may generalize to whatever the student is doing whenever he thinks about that failed exam. Consequently, books, classrooms, in fact the entire paraphernalia of study and education may become associated with tension. Fortunately, since these responses are learned they may become unlearned or replaced with new learning.

I have attempted to outline how this new learning may take place. Essentially the mechanisms of relaxation and desensitization, used most effectively and currently by Joseph Wolpe, seem to

hold some promise for the treatment for these difficult study problems. The technique is not a total panacea. But it is certainly promising.

We have probably all been guilty of a good hearted, but incompetent assistance to students who come to us with problems of exam panic. "Relax," we have told them fatuously. "Just relax and it will all be fine." Now it appears that we may have counseled better than we thought. Isn't it nice to be doing something by accident and be right?

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BEHAVIOR MODIFICATION: TWO STRATEGIES[1]

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The term "behavior modification" has long been linked with operant conditioning, Skinner's impressive theory of behavior shaping. Those of us who do behavior modification outside of Skinner's strategies find ourselves embarrassed by the association. While fully acknowledging our paternity, we are unwilling to be accused of the sins of our father (or more correctly, of his other children).

Students of operant conditioning find themselves targets for such epithets as "mechanistic," "shallow," "manipulative," "calloused," and even "soulless." Whether or not such terms are appropriate, those who use them are often in a position to facilitate or impede the efforts of the experimenters.

Much more serious than name calling is the charge that the successes of operant conditioners, with regard to human behavior at least, tend not to be maintained under field conditions. It is not uncommon to hear an experimenter remark, after successfully shaping a behavior, "The behavior will now be maintained, hopefully, by naturally occurring social reinforcers outside the lab." And sometimes it is.

There is now developing a set of strategies for modifying behavior which, while stemming directly from the operant position, manages to avoid the common criticisms. These strategies are

designed to produce "self-shaping systems," that is, environments which facilitate self-shaping or self-management.

Self-shaping is to be distinguished from experimenter shaping. In both cases some final performance is produced by making reinforcing stimuli contingent upon responses which approximate that performance. The standards for (or criteria of) an adequate performance are known to the experimenter who shapes the behavior of the learner. When the person doing the learning must shape himself he must first learn the standards for evaluating the performance. In brief, he must learn what a good performance looks like and what is wrong with a bad performance. He can do it by studying adequate and inadequate models. He will then be in a position to monitor his own behavior, rewarding himself for approximations to the goal and punishing himself for errors.

Examples of self-shaping systems are the home environments provided by parents trained with Child Management, the class environments of teachers trained to use the Michigan Language Program, and certain of the instructional programs within the M.L.P. Each of these training systems is arranged to allow learners to shape themselves, that is, to apply reinforcers and punishers on the basis of the similarity between an actual behavior and an intended behavior.

While it is premature to attempt any definitive statement of principles, some differences can be discerned between operant and self-shaping strategies which may later lead to such principles.

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Primary Distinctions

There are two primary distinctions between operant conditioning strategies and self-shaping systems strategies: the first relates to who it is who determines whether a behavior shall be learned; the second relates to the kind of reinforcer to be used. The operant experimenter selects a task, isolates a dependent variable, e.g., rate of response, selects a reinforcing stimulus, and then makes occurrence of the reinforcer contingent upon occurrence of a task response. The reinforcing stimulus is selected for convenience. Rate of work has been increased by using money and other tokens, M & M's, water (after inducing thirst), food (after inducing hunger), removal of aversive stimuli, a variety of "social" consequences, etc.

A self-shaping system requires, first, that the learner choose to participate in the learning activity, and, second, that the reinforcer provide information related to progress toward his goal. Typical reinforcers in self-shaping systems are these:

Weight control: number of calories consumed per day.

Marital training: number of positive and negative actions per day.

School learning: number of tasks completed correctly per session.

These measures have reinforcing value because they provide information about progress. They are of no value as reinforcers if the learner does not choose to engage in the activity. If he does not so choose, the experimenter does not attempt to shape him into it by using non-task-related reinforcers

such as candy or smiles. Rather, he reevaluates the task to determine whether it is appropriate to this learner and/or whether the environment is conducive to performance of the task. For example, a ghetto child placed in a middle-class first grade has more important tasks to engage him than those used to teach reading. He must first learn a new complex of social skills and, perhaps, a new language. Or again, a frightened child may be unable to focus on a task until he has brought his peers under control. Their presence may produce uncertainty far beyond that arising from the task.

Reasons for failing to engage in a task or to continue in it have become foci of interest to systems strategists. Secondary distinctions between the two sets of strategies arise from these concerns.

Secondary Distinctions

Three secondary distinctions are presently apparent, one arising from concern with increasing the visibility of both the cueing stimulus and the reinforcing stimulus, a second related to the role of attack behaviors, and a third related to the apparent need for both on-target and off-target feedback during learning.

Cueing and Reinforcing Stimuli. Studies of pre-conditioning training are not currently popular, but those carried out a few years back provided a valuable lesson. Much of what passes for disinterest in learning tasks can be attributed to poor discrimination of cueing stimuli. Learning is slow and

difficult in a "noisy" system. We have found that training children to discriminate basic English words greatly facilitates attention to the teacher's voice and appears also to aid the paired associate learning common in reading. Another training example for cueing stimuli is that given to teachers. To increase the proportion of rule enforcements by the teacher, we provided a self-shaping technique for identifying rule infractions in a classroom. Enforcement increased from a base-line of $\underline{c}$ 50% to $\underline{c}$ 80%.

Discrimination of the reinforcing stimulus requires solution of a different set of problems. Classroom feedback signals are notoriously inadequate in a number of ways. Achievement behavior and social behavior tend to be confused by teachers; feedback in the form of grades tends to occur too late to be effective and to be based on factors other than achievement (such as effort); and finally, students act as though they have little or no control over the apparent "consequences" of their work.

In a marriage system still another kind of feedback problem obtains. An apparently "positive" behavior (such as fondling the spouse) is sometimes responded to as though it were negative, an "attack." That is, the consequence of a behavior tends to vary with the mood of the spouse and is, therefore, an undependable signal.

Most of these problems are avoided by operant experimenters. They tend to be concerned with finding a reinforcer which will be effective during the

training phase; systems experimenters must discover or construct a feedback signal which will operate under field conditions.

Attack Behaviors. Aggressive behaviors of both children and adults tend to be categorized as problems to which operant techniques may be appropriately addressed. If a child attacks his siblings or school peers, or cries easily, or destroys property, or breaks rules, such behaviors may be reduced or eliminated by training. The systems experimenter on the other hand, assumes that, if a behavior occurs, it may well serve a necessary function in a system.

Thus, if a negative behavior remains at strength solely because it is being maintained by behaviors of parents or teachers, it will extinguish if ignored. But if it is functional in the learning economy of the child or adult, it will not extinguish when ignored and attempts to eliminate it may cause a new set of problems.

Rule testing is a good example. In a stable, safe classroom, rule testing occurs at a rate approximating one per child-hour under ideal enforcement conditions. While all normal children test the rules, on a given day only a few may do so and those at a variable rate. Rate of rule testing may be related to emotionality. In fact, rule testing is treated as though it were an operant used by the child to allow him to focus on the task. If that is the case, obviously we extinguish it at our peril.

Attack behaviors in marriage systems may also be either non-functional, maintained by the spouse, or functional, information producing operants. Those which are non-functional will extinguish if ignored; those which are functional are left alone to operate.

On-target, Off-target Feedback. The final distinction in this secondary series is still cloudy. Much of the early controversy in programmed learning concerned the treatment of incorrect responses. To oversimplify, one group focused on providing on-target feedback, knowledge of correctness; another group insisted on allowing errors to occur and on using each occurrence as an opportunity to teach about incorrect answers, i.e., why a given error is an error. In short, this second group insisted on providing off-target feedback. An analogous situation has arisen in strategies for teaching marital behavior. One experimenter has focused on increasing the visibility of aversive marital behaviors, i.e., attacks. If this difference in focus is analogous to the provision for on- and off-target feedback, it might be resolved by providing both kinds of information during the process of learning appropriate marital behaviors. We have found off-target feedback to be a necessary condition for the occurrence of self-evaluation behaviors by school children. In effect, the child looks at a letter he has drawn and says, "That's wrong (because) the straight part of the 'd' should touch the top line." He then draws it correctly.

If this analysis is correct, the final distinction between the strategies

becomes clear. Self-shaping systems require feedback sufficient for self-evaluation to occur, that is, sufficient to allow the learner to reinforce himself for correct responses and to punish himself for incorrect ones. In operant conditioning strategies, the evaluative behavior is contributed by the experimenter.

Summary

This paper constitutes a first attempt to describe a set of behavior modification strategies termed "self-shaping systems." The analysis used here consists of determining the points of difference from operant conditioning strategies.

It is assumed that the position is congruent with principles of operant conditioning as described by Skinner. The difference lies in the implementation of those principles.

Primary differences concern the volitional role of the learner (who must commit himself to some terminal or goal behavior) and the specifications for a reinforcing stimulus (which must provide information on progress toward the goal and which must operate under field conditions). Secondary differences concern pre-conditioning training, the treatment of aggressive behaviors, and the requirement for both on-target and off-target feedback to allow self-evaluation.

Footnotes

1. The concepts described in this paper arose from numerous discussions among a group at the University of Michigan's Reading Improvement Service: Dale Brethower, Dr. Carl Semmelroth, Dr. Raymond Cabot and Judith Smith. Dr. Semmelroth first contributed the term "self-shaping," I believe, some four years ago. The author is solely responsible for the present formulation.

EVALUATION OF INSTRUCTIONAL MATERIALS FOR COLLEGE AND ADULT READING

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Evaluation of instructional materials will be vacuous if one disregards the complexities of the reading act. What multifariousness of skills are specifically needed at the college-adult level? Where does one embark when evaluating materials?

Heilman (1962) stated:

> ...at the college-adult level our instructional programs, thus far developed, have dealt with a very limited number of discrete facets of reading such as rate, vocabulary, and study skills with some lip service paid to critical reading; therefore, we cannot say in good conscience, that diagnosis is used to develop instructional programs unless we assume that the reading needs of all students are met by the limited skills just mentioned.

Earlier research concerned with evaluation for college programs led to an article "Evaluation of workbooks for college reading programs" by Lyle L. Miller (1957). The purpose of Miller's article was not an attempt to evaluate the current materials of the times but

an attempt to provide reading instructors with criteria for selection of materials based on the need of the students enrolled in their reading programs. Miller's article listed 33 titles of materials available, by author, publisher, copyright dates, ranging from 1942-1956.

Miller states in his summary,

> It is [my] hope that this summary may serve as a time saver to other reading instructors in identifying those workbooks which seem to have the best possibilities for their specific programs (1957).

Miller's evaluating criteria are a well organized and developed review of the materials available. All instructors of college reading today should be concerned with variables such as length of exercise, scoring procedures, and special features of materials.

In aiding the present day instructor of reading in meeting individual student needs, it is suggested that we start first with the students and the total act of reading. An evaluation tool for selection of materials might well include many of Miller's criteria. But first, what skills <u>are</u> basically needed to function well as an adult reader? Let us start with this premise: unless we know what we are trying to teach, an evaluation of materials will only be a review of the materials in isolation, not whether they are needed for <u>our</u> specific class instruction.

The prime requisite is to gather comprehensive, objective criteria for

evaluating and comparing proposed materials. Evaluation of materials, to be meaningful, must be related to the educational objectives. These educational objectives must be specific and should entail a listing of specific reading skills to be taught. Research presently indicates that educational objectives should be stated in the form of student behavioral objectives instead of teaching objectives.

Behavioral objectives should emphasize the most important elements in the reading process. The evaluation of materials should entail seeing if the material to be used meets student behavioral objectives. The point here is that the program should have important elements that reflect the reading process at the college level. This method helps to outline a structured approach for evaluating materials at the upper levels of reading. It aims at giving the reading teacher an approach to meet the needs of college students within a given class of reading instruction.

Seven major behavioral objectives, involving the different aspects of the reading act, form the basis of the structured approach. Each of these major behavioral objectives is composed of several specifically related objectives. The objectives are as follows:

Behavioral Objective I

Word Attack Analysis

The student will attack unknown words adequately.

Specific Skills:

1. Attack new words by using the associated sounds with the following: single vowels, vowel combinations, single consonants, diagraphs, clusters, prefixes, suffixes and other needed word attack skills.

2. Use the dictionary to produce correct pronunciation, or ask someone who knows.

Evaluation of Material

Does the material include the word attack skills?

Name of book	Great deal	Some	None
1.			
2.			

We would strongly encourage the reading instructor to teach word attack skills by using words taken directly from texts used in the student's course work.

Behavioral Objective II

Meaning from Context

The student will understand word meanings in and out of context.

Specific Skills:

1. Realization that a word must make sense with the other words with which it is used.

2. Understand that words must fit with other words grammatically.

3. Knowledge of word meanings including usage of: synonyms, homonyms, antonyms.

Evaluation of Material

Does the material include a variety of approaches to vocabulary development?

Name of book	Great deal	Some	None
1.			
2.			

Again, reinforcement through the usage of actual college text materials, carefully selected by the reading instructor, is essential to success.

Behavioral Objective III

Basic Comprehension Skills (Stated Meanings)

The student will get the basic comprehension of a sentence, a paragraph, and an entire reading selection.

Specific Skills:

1. Reading for details
2. Reading to follow directions
3. Noting sequence
4. Knowledge of fact

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Evaluation of Material

Does the material include basic comprehension skills?

Name of book	Great deal	Some	None
1.			
2.			

Behavioral Objective IV

Secondary Level of Comprehens on Skills (Implied Meanings)

The student will make inferences, and summarize and generalize from different reading materials.

Specific Skills:

1. Skill in noting sensible inferences as well as implied over-shadowing of content.

2. Draw reasonable conclusions enabling one to summarize or generalize information.

3. Knowledge of opinions.

Evaluation of Material

Does the material include the secondary level of comprehension skills?

Name of book	Great deal	Some	None
1.			
2.			

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Behavioral Objective V

Highest Level of Comprehension Skills
(Critical and Emotional Reaction, and Application of Ideas)

The student will understand abstract material by understanding implications and assumptions and react to the printed word and apply ideas to behavior.

Specific Skills:

1. Knowing differences between emotional and non-emotional words.

2. Reliability of author.

3. Interaction between reader and writer.

4. Modification or change of values.

Evaluation of Material

Does the material have the highest level of comprehension skills?

Name of book	Great deal	Some	None
1.			
2.			

Behavioral Objective VI

Interest and Readability of Content

The student will use material that is at his instructional level. The material will be relevant to his basic needs in the academic areas.

Specific Skills:

1. Material to provide a range in level of reading ability.

2. Material to provide the teaching of skills in all content areas.

Evaluation of Material

Does the material provide a range of reading levels and the teaching skills in all content areas?

Name of book	Great deal	Some	None
1.			
2.			

Behavioral Objective VII

Flexibility of type of material and adjustments to rate

The student will determine the best method of reading different materials, adjusting rate, when to use skills of previewing, skimming and scanning.

Specific Skills:

1. Previewing

2. Skimming

3. Scanning

4. Flexibility of rate to type of material

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Evaluation of Material

Does the material include flexibility in methods of using reading skills according to a variety of materials?

Name of book	Great deal	Some	None
1.			
2.			

Just because a certain material does not meet all behavioral objectives does not in any way indicate the necessary exclusion of the material in a program. Of prime importance is the choosing of sufficient materials to aid the instructor to meet the individual needs of all students. The next step is to find materials elsewhere to aid in teaching specific needs not found in materials currently used in a reading program.

Gladys B. Moore (1970) states:

> To evaluate the results, the goals or purposes of the reading programs must be kept in mind. In many programs, gain in reading speed was the goal. In others, gains in comprehension and speed were stressed.

Are the goals of college programs based on the need of the students? Or are program goals set by what is offered in the materials?

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We must at all levels in education be more cognizant of the specific needs of individuals, and gear our reading programs to meet these needs. A few years ago, Witty (1966) pointed out that:

> careful diagnosis of each student, a variety of books and reading experiences, high motivation, and sufficient time to enable the student to develop skills in reading [are needed] to meet his most pressing needs.

If careful diagnosis of each student's reading skills is done and student behavioral objectives listed, the choice of materials will consequently be more realistic in the actual reading instruction.

One of the most difficult tasks in selecting materials is knowing precisely what the student needs. The testing or diagnosis of the student's skills is crucial. Raygor and Wallace (1970) report an attempt to develop a testing program of all basic skills coupled with a complete basic skills system of materials designed to meet the specific needs of the individual student.

The McGraw-Hill Basic Skills System breaks down the basic skills into component parts, namely: Reading, Writing, Spelling, Vocabulary, Study Skills, and Mathematics. This systems approach may be worth your time in evaluating materials for any future reading programs. The component parts of the System suggest a variety of skills and exercises pertinent to the specific needs of <u>each</u> student.

Perhaps the most significant reason for citing the Basic Skills System in this paper is to call attention to the painstakingly careful development of each component of the System itself. Parts of the system had been under development for 10 years. Rather than cite each step of the materials development process, allow me to cite five brief steps used to evaluate empirically the System's components as they were developed, as well as an empirical evaluation of the Basic Skills System used en toto in actual field trials.

1. Error-rate studies

2. Questionnaire evaluations of student acceptability

3. Try-out studies across samples--generalizability to other populations

4. Outcome studies--comparisons with control groups or with other techniques, including criterion achievement studies

5. [Selection of materials] based on formative and summative research

Summary

Although the intention of this evaluation is to be suggestive rather than prescriptive, the omission of valid principles is an indication of the complexity of the reading act. The actual analysis and evaluation of reading materials will providethe first step in course improvement for students. The final analysis and evaluation of

materials will rest entirely on the student's progress, as well as improvement in meeting individual student's needs. Objectivity in viewing results, with relationship to the design of evaluation, will enable future evaluations to provide maximum guidance in selection of materials. In selecting these materials for reading programs, we might well follow such an empirical model as set forth by the authors of the Basic Skills System.

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STANDARDIZED TESTS OF READING IN HIGH SCHOOL AND COLLEGE-- THEIR VALIDITY

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In this paper I want to focus first upon current practices in reporting validity data by test publishers or authors. Secondly, I will make an attempt to uncover some of the underlying difficulties with the concept of validity in regard to reading test. The existence of these difficulties may in part explain some of the glaring inadequacies of most of the validity data presented.

Two more prefatory remarks are called for. First, I want to place most emphasis on measures of reading comprehension. Tests of reading rate, study skills, etc. will largely be left out of consideration. Second, my comments will in some instances be very direct and involve a particular test manual or technical report. Lest I will be suspected of "picking on someone in particular" let me say at the outset that the majority of tests of reading comprehension have problems in respect to the reporting of their validity data, regardless of publisher or author. Some offend worse than others, but I do not know of any test publishers who go free and who could not greatly improve their products. Incidentally, let's not forget that these publishers do rely largely on the advice of professionals such as ourselves.

Ebel (1967) quoted Ruch as saying in 1933:

> There are in use today at least one thousand different educational

> and mental tests. Convincing critical and statistical data on validity, reliability and norms of these measures are available in probably less than 10 per cent of the cases (p. 221).

Ebel then went on to comment that:

> In a spaced sample of reviews of 20 tests in the fifth Mental Measurement Yearbook (Buros, 1959) only one was found in which the reviewer judged the evidence of validity to be adequate. Ten tests were criticized for lack of evidence of validity. Nine reviewers made no comment about the validation of the tests they reviewed. This in itself is surprising, if validity is indeed the most important quality of any mental test (p. 221).

One of the most direct routes to improved evidence of validity by test producers might involve pressure by the test users. It is the test users' responsibility to demand that the product he buys exhibits certain characteristics. Only when he exerts this responsibility is he in a position to discuss the responsibilities of the test producer. It will not do to sit back and lament the negligence of the test producers while at the same time indiscriminately buying their products.

Buros (1965) made the comment that he still adhered to his earlier statement that:

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> At present, no matter how poor a test may be, if it is nicely packaged and if it promises to do all sorts of things which no test can do, the test will find many gullible buyers.

At present, 1971, Buros' statement still seems a fairly accurate description of the state of affairs. I guess that the only effective way to combat this situation is the founding of a Test Consumers Union. The purpose of this union would be "to provide consumers with information and counsel on tests and testing services, to give information on all matters relating to the expenditure of test buying funds and to initiate and to cooperate with individual and group efforts seeking to create and maintain decent test usage standards."

Some of you may recognize the source of this Statement of Purpose. It is a direct adaptation of the description of the purpose of the Consumers Union, to be found in each issue of Consumer Report. If you think that I'm merely joking you are wrong. I do indeed think that if we find it worthwhile to organize as consumers of detergents, nail polish and cocktail mixes, as test users we should seriously consider a form of organization which would provide an outlet of independent reviews and ratings of test products. Professional organizations such as the IRA, NRC or the NCRA might give some thought to this issue.

The issue of prime importance obviously is: What's wrong with existing practices?

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After all, test producers do provide evidence of validity in their manuals and technical reports, don't they? What criteria would one need to apply in order to rate tests on, for instance, the adequacy of the data reported for validity?

First of all, let's deal with the question regarding the extent to which publishers can be expected to provide test users with evidence of validity. Validity is often defined in terms of test usage. Cronbach just recently stressed the fact, once more, that it is not the test which is valid or not valid, but rather validity hinges upon the usage made of the test (Cronbach, 1969).

How then can we expect the publisher to provide data on validity? In general, one cannot demand that technical reports contain data which show that the test is valid, period. Neither can one demand that such reports present data which cover all possible usages of a test. The test user does have a right to request, however, that validity data are provided which make it possible for him to decide whether or not the test can be validly used for the purposes stated directly or implied indirectly by the publisher. If any statement by the author or the publisher appears either in the manual or in the sales pamphlets, etc., which indicates the appropriateness of the test for some particular purpose, such statements should be backed up by adequate evidence. To this extent a test publisher can be held responsible.

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Comments on current reporting practices

Turning to present day practices of reporting validity data we find problems in the following aspects.

1. Tests are published prior to validity studies.

Though it is true that the publishing of a new test releases a lot of validity studies of the instrument, and that publishers anticipate this, one might expect that basic evidence of validity is obtained prior to publication. After all, a test is a commercial product; the producer makes claims for its performance; how could he do so without having conducted studies which assure a satisfactory level of performance, i.e., validity studies? Yet, in the technical report of the STEP tests, for instance, we can read:

> Since the tests in the STEP series are intended primarily as measures of developed abilities in six broad areas of education, their content validities are of primary importance. Content validity is best insured by relying on well-qualified persons in constructing the tests as was done for the STEP series. It can be judged in large measure by reviewing the tests. As an empirical check on this armchair approach the publisher expects to conduct validity studies, relating test scores to suitable criterion measures (ETS, 1957, p. 9).

This is a most unfortunate statement, in more than one respect. For the present it will suffice to point out that a large publisher can get away with building an extensive test, invest heavily in its production, present no evidence of its validity to its buyers and announce that he will pick up such evidence along the road. As an aside it may be noted that subsequent supplements to the Technical Report contain no further evidence on the content validity of the test. A minimal requirement, I think, should be that test publishers conduct validity studies prior to the commercial release of their instruments.

2. Validity data demonstrates lack of systematic validation procedures

Just as one expects validity studies done prior to the commercial release of the test, one should logically assume that the criteria upon which the validity of a particular test is based are selected prior to the building of the test. The logic of test building seems to require that one builds the test in order to be valid for something definite; not that one builds a test in the hope that there will be some criterion in relationship to which it will be valid. Yet, I am firmly convinced that the latter procedure is the most common one. There are hardly any technical data to be found in the descriptions of the tests I reviewed which might indicate that the validity obtained is the end product of a plan of systematic improvement during the test development phase.

Certainly, weeding out of "non-valid" items is a common procedure. Note

however, that non-valid items are most of the time non-valid only in terms of what the entire test measures. The relationship of the latter function toward a set of predetermined criteria is almost never the object of systematic developmental study. The screening of items in terms of their validity merely serves to increase the homogeneity of the test. In itself it has no meaning for the relationship of the whole test to its criterion. Most of the so-called item validity coefficients could be more properly labelled as item reliability coefficients.

The fact that some tests are published prior to any validity studies is in itself an indication of lack of systematic inquiry by the test builder as to the validity of tests. There is other evidence, however. For one, the large discrepancy between the sample sizes used for norming and for validity studies which quite often exists seems to point to a certain casualness as far as ascertaining validity is concerned. In the Burnett Reading Series Survey Test (1968), 6076-7th graders were used for norming the intermediate level test, 1456 of these were drawn for establishing reliability and the only validity data reported involved 38 (sic!) students. The Traxler Silent Reading Test (1969), level 7-10 reports criterion related validity data involving only 80-9th graders for correlation of the test with school grades and 54-6th graders for correlation with a composite of four other reading tests.

3. Tangential validity data often confuse the issue of the test's validity.

The unsystematic nature of test builders' attempts to show validity for their tests is probably most clearly reflected in the choice of criteria used for establishing criterion related validity. Not only does the student of test manuals encounter a pot-pourri of tests with which the new test is being correlated but, more damaging, the rationale for inclusion of particular tests is almost never given. In the few cases such rationales are presented, they are often quite confusing as is evidenced by this quote from the manual for the Silent Reading Tests (1963), p.10:

> The only way to determine this validity would be to determine the relation between results of these tests and actual reading and language ability. The correlation between the Silent Reading Tests and examination marks confirms this statement.

Not only is the reasoning underlying this quote circular, the statement reflects a naïveté about basic concepts regarding validity which should cause concern among all test users.

It may be granted that the test referred to above is not meant for American users. Comparable confusion as to why particular criteria are included in validity studies, and others not, does exist however in regard to our own reading tests.

Generally, three classes of criteria are included in the more extensive

reports: grades, intelligence scores and other reading tests. Equally, generally high correlations with these tests are thought of as desirable and quoted with a certain satisfaction. It seems, however, that a few basic questions may be asked in regard to the appropriateness of these criteria. These questions reflect the test users' expectation of a much more reasoned selection of criteria by the test developer than is usually the case. So far the overriding reason for reporting the correlation with certain criteria seems to be the availability of the criteria, not their appropriateness.

Let's take a look at teacher grades. Why should a reading test correlate highly with teacher grades? Or, a somewhat tougher question: If a reading test does not correlate highly with teacher grades, what does that mean in terms of the test's validity? Only if the major job the test is designed for is predicting grades can an unambiguous answer be given to this question. The issue becomes even more complicated if one looks at the type of grades reading tests are often correlated with. In addition to grades in reading, those in English, Arithmetic, Science, etc., function as criteria. How to interpret high or low correlations in terms of the original purposes for which the reading tests were built is almost never made clear.

Much the same questions can be asked when considering the correlation of reading test scores with intelligence tests. When one studies test manuals one invariably gets the impression that

the test authors hoped to maximize the correlation with such tests. Why? What if a reading test correlates .90 with an intelligence test? What does that tell us about the test as a test of reading? And even: Why should we, other than in a tangential way, be very much concerned with the predictive validity of reading tests in terms of forecasting I.Q. scores? As matters stand now, we have such I.Q. scores in our files on most of our students anyway. Yet, if any criterion related validity data are reported at all, chances are that I.Q. scores make up for a large part of the criteria included. I am not suggesting that such information is totally worthless. I simply maintain that it is mostly so, unless a rationale for the inclusion of such data for a particular reading test is presented. As a general case, such validity data make the test very little more interpretable for the test user.

Then there are the other reading test scores. Often, when correlations between a test and a number of criteria are reported, some reading scores are included among the criteria. Yet, the actual number of such referents is often surprisingly small. A typical case is illustrated by Table 6 in the manual for the SRA Reading Record (1959). Of the 26 correlations reported for the Comprehension section of this test, only two are correlations between this test and another reading (sub) test. This is indeed a surprising finding; it is not, however, unique to this test.

Let's consider the possible rationales for inclusion of other reading tests as criteria. Builders of new tests can

basically adopt one of the following positions:

A. They want to build a test which has the same purposes as existing tests and they are satisfied that at least some existing tests achieve that purpose, i.e., are valid.

B. They want to build a test which has the same purposes as existing tests but they want to achieve superior validity.

C. They want to build a test with a purpose unlike any existing test.

What kind of validity data can we expect a test constructor in each of these categories to present? In considering this question I will limit myself for the present to the issue of correlations with other reading tests.

Case A: Same purposes--same validity. This test builder simply has to identify which test, or subtest match his test or subtest in purpose. Since he accepts the validity of the other test as satisfactory and merely wants to produce a new product (less expensive, less time consuming, or simply profitable), he has to show the correlation of his test(s) with these criterion tests. It is up to the test user to evaluate the purpose of the criterion tests, their evidence of validity and the size of the correlation between the new test and the criterion tests.

Case B: Same purposes--superior validity. Here the test builder's task is a more complex one. As in Case A he will have to identify the tests or subtests which basically purport to do the same thing

his test is designed to do. A simple correlation coefficient between his test and the criterion test however, is of little use in demonstrating superior validity. A perfect correlation with these criteria would be damaging in terms of the premise of unsatisfactory validity of the criterion tests. A less than perfect correlation could be due not only to obtaining superior validity but also to a host of other, and probably more likely, factors.

Case C: Different purpose. Here again, correlations with other tests may be needed as part of the validity evidence. Yet, not necessarily do such correlations have to be high. As a matter of fact, under most circumstances they should not be. If a test author constructs a test different in purpose than any existing tests, the problem of criterion related validity becomes quite complex and correlations with other tests may be presented mostly for purposes of showing construct validity.

The above discussion of the meaning of correlations of reading tests with other reading tests can be summarized as follows: The indiscriminate presentation of correlations of one's reading tests with other tests is meaningless except for one narrow area of interpretation: prediction. However, as a general case, the prediction of scores on one reading test in terms of scores on another seems a rather trivial activity. From the discussion of the correlations among reading tests presented in current manuals one gets the definite impression that they are included to show that the test under consideration does indeed

do the job it was supposed to do or at least does not do that job worse than the other tests. The discussion of the three different cases pertaining to the construction of a new test intended to illustrate that in many cases the mere presenting of correlations between a test and some other reading test constitutes insufficient and even uninterpretable evidence.

Basic problems with reading tests validity

In taking the analysis of problems regarding the reporting of validity data one step further, we will address ourselves now to the fact that a certain confusion exists in regard to basic types of validity. This confusion is demonstrated by the way in which authors of test manuals treat the concepts of content validity, criterion validity and construct validity. The quote from the STEP manual above illustrates this point. To back up armchair judgment regarding content validity, it was proposed to engage in a number of correlational studies clearly designed to show criterion related validity. Another instance of this type of confusion is provided by Davis when he, in a discussion of content validity, refers to evidence regarding the existence of separate skills underlying reading performance, obtained from factor analysis (Davis Reading Test, 1962). Davis' treatment of the issue might be quite consistent with his own theoretical views, yet, many a researcher would classify such evidence as belonging in the realm of construct validity. On the other hand there are many cases where references to curriculum materials are

the only type of evidence in regard to content validity provided by test manuals.

In this section of this paper an attempt will be made to describe some of the core problems in relation to the concept of validity of reading tests, which I feel are at the bottom of the confusion just described and which explain largely the unsatisfactory state of affairs regarding the reporting of evidence of validity in reading test manuals or technical reports.

First of all I want to consider the usage of the term "skills." It seems possible to think of "skills" in two ways: a behavior or a construct. One can consider it a skill to read cartoons, to read traffic signs, to read bank statements. The degree to which one has achieved or mastered the skill can be demonstrated by one's behavior. If a man who has seen a stop sign does not bring his car to a halt, we are faced with only a limited number of alternate explanations: he doesn't give a "hoot" or he doesn't comprehend. Skills at this level are defined in terms of actual behaviors. Their number is many. It is only our ability to recognize observable similarities in situations and thus our ability to categorize on the basis of such overt characteristics which limit the number of discernable skills at all.

The user of the term skill, however, can easily slip into a pattern of usage which adds an entirely different dimension to the term. Davis'search for skills underlying reading behaviors, or the search for so-called "basic reading skills," postulates person-

characteristics which are not directly observable and which have a kind of independent life -- they quickly turn into basic abilities, akin to constructs such as intelligence. If we ask whether a reading test measures skills in this sense we are engaged in a discussion of construct validity.

One other concept creating confusion is the concept of "content validity." Two factors contribute to this confusion. First of all many test users think of content validity in terms of content of actually used materials. Statements such as: "This test should be content valid because its paragraphs are drawn from all kinds of textbooks and at this level" cater to this interpretation of the term "content." The authors of the APA-AERA guidelines from which the designation content validity stems conceived content as a two-dimensional concept. Content is tied down both by a reference to some body of information (text) and to some behavior (e.g. recall, understanding, excluding). Content validity, therefore, might be called "objective validity" or "object validity" in that a test possesses it if the test constructor has sampled from the course objectives which are "manufactured" on the basis of the well known two-way grids with actual (classes of) information to be transmitted along one axis and behaviors (such as to be found in Bloom's taxonomy) along the other axis.

Secondly, confusion may exist in regard to the term "content validity" due to the fact that skill oriented subjects such as reading and arithmetic are never concerned with a specific body of

information, but with kinds of bodies of information. This is in contrast to such subjects as history and geography. The implication is that test constructors should widely sample from all possible kinds of information sources unless they make a priori delineations of the limits of their test.

The above discussion of existing confusions becomes more meaningful if we tie it in with a basic question: What is it we want to measure with our reading tests? Is it, foremost, whether or not he has basic abilities which will facilitate his functioning in these situations? I think that the more basic question is the first one and that only issues of efficiency and matters of theoretical interests create a need to consider the second question.

Adults are confronted daily with various reading tasks. How well do they cope with them? That is the basic incitement to measurement. These reading tasks are numerous and may be varied. Determination of success is sometimes demonstrated by a behavior which is naturally linked to the task, a sign behavior. Examples of such behavior are: throwing away a cigarette at a "no smoking" sign; laughing at a joke, etc. More complex reading tasks may need artificial gauges of success. These too may be rather direct and highly content valid. An example may clarify this point. Task: read a newspaper news story. Behavior of interest: get out of the story what most adult readers would get out of it and what the story intended to convey. The story is about Nasser's sudden death but includes some

details about his life, political allies, etc. I give a subject the story which he is to read. I have someone look over his shoulder and ask: "What does the paper say about Nasser today?" This is the question which completes the test situation. I have decided that the reply: "He's dead" constitutes successful behavior. My subject answers: "He was married in ...." Such an answer, I think, would certainly cast doubts upon my subject's ability to read newspaper stories of the kind just described. Would he be better at editorials? At detective stories maybe?

It is relatively easy to enumerate a score of reading behaviors at the same level of specificity as the one above: understanding directions of a glue-together toy, getting the meaning of any unknown word from the context in a sports story, finding unsupported statements in a political speech; etc., etc. It is also relatively easy to design tests for these behaviors which have content validity. If we would propose, however, to construct tests for all of these behaviors so as to insure high content validity, we would immediately be faced with Lennon's (1962) warning comment:

> Surely, no reader is so naïve as to suppose that there really corresponds a separate identifiable skill or ability to each of these test names (p. 197).

This rebuttal is well known. It is true and yet very damaging to a clear view of the problem. One question is whether a subject has mastered a particular behavior which we want him to

master. That question is our first incitement to measurement.

A second and totally different issue is the question as to which factors in the subject's psychological make-up allow him to perform as he does. This question is in the domain of the so-called "really existing skills." The question as to what "basic skills" underlie performing particular tasks, i.e., exhibiting particular behaviors, is of little practical interest in those areas where the repertoire of behaviors is rather limited (i.e. laying bricks). It is only the quantity of behaviors which can be identified as constituting a class of tasks, the relationship of which with other classes of tasks, is not immediately apparent, which force upon the practical measurement man in the area of reading the question: "Can't I reduce the number of tests needed to measure all these behaviors in some fashion?"

The issue of content validity becomes more and more complicated the further we move away from the actual behavior of interest. These behaviors are terminal behavior of many kinds--they constitute the actual reading tasks performed. Once we start reducing these numerous tasks to a smaller number of variables, the demonstration of evidence of content validity becomes a near unsurmountable problem.

In the light of the above comments, I think that the most preferable way of dealing with the issue of validity in regard to reading tests rests upon the following steps:

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I. a) Determination of actual terminal reading behaviors. One need have no great concern for the fact that over-specification may result. Inclusion of too many behaviors is less damaging than inclusion of too few.

b) Design tests with high content validity for these behaviors. These tests should serve as basic content-valid tests.

II. a) Apply reductionary techniques (such as factor analysis) to determine the smaller number of variables underlying the behavior on the content-valid tests.

b) Construct test items which seem to represent these variables. No need to be particularly concerned about content validity.

c) Concurrent and predictive validity of these tests need to be high. This validity is determined with the content-valid tests as criteria. Whether or not these Level II tests are factorially pure, i.e., have high construct validity is relatively unimportant, as long as they are characterized by high concurrent, and predictive validity; efficient administration, and subjective acceptability to students.

III. As a matter of scholarly curiosity and as an item of further consideration in terms of research in reading related fields, attempt to construct factorially pure tests, measuring one of the dimensions mentioned under II. These tests cannot be shown to have content validity, neither do they need to show high criterion related validity if the criterion is one of the Level II Batteries. The determination of construct validity

of these tests is an issue of study which may involve tests extraneous to the field of measurement of reading behavior.

I am aware that the three level outline as presented here is very brief and incomplete. It is merely meant to be suggestive of an approach which is founded upon the following assumptions:

a) Given enough specificity of a task, content valid measurement of it is possible.

b) Content valid items may require so much specificity that educational measurement use of them becomes impractical.

c) Such items can function as "one-time" anchor points for second level tests.

Despite the brevity of this exposé, I believe that you as readers will be able to think these basic premises through. I do contend that, at least at the level of conceptualization, an approach like this does cast some clarity on the question of validity for reading tests.

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The Functions and Preparation of Reading Specialists

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The study concerns itself with the type of course work and experiences that are considered most effective in preparing reading specialists for the particular functions assigned to them. Planned programs for the preparation of reading specialists developed by college staffs, state departments of public instruction, or local administrators and their staffs are available. However, very little information is available from the reading specialists themselves as to what functions they actually serve and what preparation they have found most effective in order to qualify for their assignments.

The term reading specialist is given a broad interpretation in this study. It is used to denote a teacher "who has more knowledge, skill, or experience in the teaching of reading than the average classroom teacher and who spends most of his time (75% or more) in activities concerned with teaching of reading." College personnel in the area of reading and administrators (full time) were excluded.

A questionnaire was prepared and pre-tested by asking sixteen reading specialists to complete one, and to make written comments about the content and form of the questions. After fourteen of these were returned, a meeting was held with this group of reading specialists in which the questionnaire

was discussed orally. As a result of the written suggestions, oral discussions, and conference, the final form of the questionnaire was formulated, deleting some items, adding a few, and changing others.

To obtain a stratified random sampling in which each state was represented, every tenth, hundredth, four hundredth, and seven hundredth school corporation in each state--or the number of these existing in a particular state--were selected from the Education Directory (1965-66). In order to continue the random sampling, superintendents employing more than one reading specialist were instructed to ask the first person on an alphabetical list of reading specialists in the school corporation to fill out the questionnaire.

A total of 123 questionnaires were sent out to superintendents. Thirty-nine of these employed no reading specialist. Of the remaining 84, 74 questionnaires or 88% were completed and returned.

The seventy-four reading specialists who completed the questionnaire represented 40 of the 50 states. Forty-five were employed in elementary schools, one in a senior high school, eight in junior high schools, and twenty in combined elementary and junior high schools. The populations of the communities represented were:
Less than 2,000 - 3 communities (4%)
2,000 to 19,999 - 44 communities (59%)
20,000 or more - 27 communities (37%)
The school population served by the reading specialists varied from a school with 12 teachers to one with 775 teachers.

The average school population of the school corporations was approximately 2,200 students with 87 teachers. Statistics concerning the school population do not indicate a ratio of reading specialists to number of pupils, since the corporation may have employed any number of reading specialists; they are meaningful only with regard to size of school population served by the reading specialists who completed the questionnaire.

The Functions of Reading Specialists

The functions of most reading specialists are varied considerably. At the present time, state departments that have special certification for this field of activity have generally only one pattern of requirements. Since this study is concerned with the question of how best to prepare reading specialists, it has concentrated on what type of academic training and experiences would best qualify a teacher to begin working in this general area.

The most frequently included responsibilities checked in the questionnaire were, in order of frequency, that of a coordinator of the reading program (86%), working with instructional materials (85%), interpreting the reading program (82%), teaching remedial reading (72%), and counseling with parents and/or children (78%). Approximately half of the reading specialists listed demonstrating reading lessons (57%), evaluating the reading program (57%), interpreting the results of published research in the field to other teachers (46%), and providing inservice training to teachers

(46%) as a part of their responsibilities. Working in reading clinics (12%) and teaching college courses in reading (7%) were almost negligible.

Space was provided to write in additional functions. Those listed frequently are general improvement of teaching competency, upgrading the basic reading program, encouraging professional reading, directing summer reading programs, assisting elementary supervisors, developing reading tests for specific situations, alerting administrators of existing reading problems or of opportunities to improve the reading program, and helping evaluate teachers.

Reading specialists who coordinated the reading program for the school indicated that the most important function in this area was to coordinate the remedial reading program of the special reading teachers (57%) and of the classroom teachers (56%). About half were also responsible to coordinate the total reading program of the school (43%).

Seventy-two percent of the reading specialists indicated that they taught remedial reading. This function was served indirectly as a consultant or resource person to the classroom teacher (74%), or directly, working with small groups of from 2 to 20 children, averaging approximately 7 in a group (71%). A few worked with individual children on a tutorial basis (37%).

Only nine of the seventy-four reading specialists were engaged in clinical work. All nine were administering tests and diagnosing reading difficulties.

Four of them were directors of the reading clinic. Most of the work with the children was done on an individual basis; some was done in small groups of from 2 to 20 children, averaging 8 in a group.

Interpreting the reading program was a major function of the reading specialists. Interpretations were made with approximately equal frequencies to the teachers and administrator and to the parents (89% and 79% respectively).

Fifty-seven per cent of the reading specialists demonstrated reading lessons to the classroom teachers. This was most frequently done in the teacher's own classroom (82%). Demonstrations made to groups of teachers in workshops or other inservice training situations was another frequently used technique (71%). A few of them served as substitute teachers to enable classroom teachers to observe other teachers teach a reading lesson (19%).

The second most frequently listed function was working with instructional materials. The reading specialist usually assisted in the selection of instructional materials (77%) as well as in the preparation of materials for special purposes (77%). Half of the reading specialists also helped develop new instructional materials (58%) and helped to collect published materials (55%).

The functions that reading specialists engaged in, probably because of administrative assignments, may not be those that they considered most essential from their point of view. Although the rank

of frequency of assignment and the evaluation of importance agreed somewhat in general, there were noteworthy exceptions. The coefficient of correlation between assignments of functions and an evaluation of functions by the reading specialists is .76.

Functions	Rank, according to Assignment	Evaluation
Coordinating reading program	1	3
Teaching remedial reading	4	1
Providing instructional materials	2	2
Interpreting reading program	3	6
Inservice training of teachers	9	4
Counseling children	5	5

There were no consistent patterns regarding any functions that had a tendency of being grouped together. Each reading specialist's assignment seemed to be geared to the needs of the local situation. The range of the number of functions assigned to any one specialist was from 2 to 11 with a mean of 7.2. Only four checked less that five functions and three more than ten. Very few reading specialists indicated that the interpretation of research was one of their important functions and rated it second to the last in their evaluation.

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College Preparation for Reading Specialists

From a list of 24 college courses the reading specialists were requested to check those that contributed specifically toward their preparation as reading specialists. All 24 courses were checked, ranging from frequencies of 7 to 67 times (10% to 90%). A course in child and/or adolescent psychology showed the highest frequency (90%), while a foundations course in reading was a close second (87%). Then, the emphasis swung back to educational psychology as a third choice. Literature for children and youth was fourth. For the next three spots the area of diagnosis and remediation was represented in the courses on tests and measurements as fifth, remedial reading as sixth, diagnosis of remedial problems as seventh. Audio-visual aids received eighth place, a general course in composition ninth, and psychology of exceptional children, tenth.

When ranking these courses according to importance, not frequency of mention, the remedial course in reading ranked first and was followed in order by diagnosis of reading problems, foundations of reading, child and/or adolescent psychology, tests and measurements, and educational psychology.

There was considerable agreement in the ranking of importance and frequency of some of the courses--child and/or adolescent psychology, foundations of reading, educational psychology, tests and measurements, remedial reading, diagnosis of reading problems, and audio-visual criteria. Striking

disagreements also presented themselves. Literature for children and youth ranked fourth in frequency as a contributing course, but was rated much lower in value (14th). Clinical procedures tied for twentieth place in frequency as a contributing course and tied for eighth place in value. The coefficient of correlation between the ranks of these two criteria was only .56. In other words, many courses that contributed something to specialist preparation, because of the content or manner of presentation, were rated very low in value. Others, like seminars for consultants or supervisors, were rated high in value, but only a few respondents actually had experience with them. Courses chosen most frequently as contributing toward preparation of a reading specialist and those evaluated most highly are listed in Table 1.

In an analysis of these results several facts were evident. One of the most important areas was that of child psychology (Child growth and development and the learning process). Courses rated high in this category were child and/or adolescent psychology, educational psychology, and psychology for exceptional children (abnormal). Courses concerned with teaching reading constituted another category; among the most frequently included or most highly evaluated courses were foundations of reading, remedial reading, and the seminar for consultants and supervisors. A third category concerned itself with testing, diagnosing, and clinical procedures. Courses rated high were tests and measurements, diagnosis of reading problems, clinical procedures,

TABLE 1

Courses Most Frequently Chosen in Preparation for Reading Specialist

Courses	Ranked, according to Actual contribution	Teacher's evaluation
Child psychology	1	4
Foundations of reading	2	3
Educational psychology	3	6
Children's literature	4	14
Tests and measurement	5	5
Remedial reading	6	1
Reading diagnosis	7	2
Audio-visual materials	8	8.5
Seminar for reading specialists	19	7
Clinical procedure	20.5	8.5
English composition	9	23.5
Phonetics	17	10.5
Guidance-counseling	15	10.5
Psychology of abnormal	10	12.5

guidance and counseling. Another group of courses, related because they serve

as background knowledge for the teacher, are literature for children and youth, audio-visual media, English Composition, and phonetics and/or phonemics.

Courses that were conspicuous because of their neglect were those concerned with research (methods of educational research and statistics) and linguistics.

An opportunity was provided to add courses found advantageous but not included in the questionnaire. Among courses listed were aspects of foundations of reading such as "linguistic approach to reading," "improvement of reading" with special references to new approaches, "teaching language arts," "psychology of reading," and "reading in the secondary field." Other comments were about some phase of remedial or clinical work in such courses as "learning disorders," "reading for disadvantaged children," "vision difficulties and reading," "perceptual handicaps," and "neuro-physical development." A few referred to planning, organization, administration, and supervision of special reading requests. One of the most common requests was for more workshops and internship programs.

It would be feasible that, instead of courses or in addition to courses, self-study (independent reading of books and journals concerning the reading process, psychology, diagnosis, remediation, etc.) represented an important part of the preparation as a reading specialist. However, this aspect of preparation did not prove to be very essential. Only 4% considered this the most important contribution toward their preparation;

15% said it represented about half of their preparation; 10% indicated that it made "some" contribution. The balance, 71%, did not indicate that self-study had contributed to their preparation. The results are rather surprising, since many reading specialists in the past did not have the opportunity to take specific course work for their preparation.

In rating their academic preparation for the position as a reading specialist on a scale of from 1 (least satisfactory) to 5 (ideal), the following evaluation resulted: 5 (ideal)--10%; 4--21%; 3--51%; 2--14%; 1--4%. The average rating was 3.2 or slightly better than average.

Experiential Preparation of a Reading Specialist

Experience plays a major part in the preparation of a reading specialist. The typical reading specialist who completed one of these questionnaires taught as a regular classroom teacher from 5 to 10 years (81%). The range is from 1 to 25 years. He has also served as a reading teacher or remedial reading teacher for about 3 years (63%). He has had some, but less than one year, experience in a reading clinic (19%). He has had approximately four years of experience in administering and interpreting tests (38%).

In evaluating their teaching experiences, the reading specialists considered classroom teaching as the most important experience and remedial teaching as second. Working in a reading clinic was also listed as a valuable experience, but not nearly as frequently as the

two above.

Most of the reading specialists have completed a practicum or internship experience. This experience included administration and interpretation of tests for 38% of them, teaching remedial reading (49%), doing clinical work in reading (28%), supervision of remedial teaching (34%), preparation of instructional materials (29%), and varied other duties. Among the practicum experiences rated most valuable were (1) teaching of remedial reading, (2) clinical work in reading, (3) administering and interpreting tests, (4) supervision of remedial programs, and (5) preparation of materials.

Essential Knowledge of a Reading Specialist

Reading specialists were asked to evaluate areas of knowledge or specific skills in which they should be most thoroughly informed in order to operate most effectively. The ten highest ranked areas were, in order of importance:

1. Psychology: learning to read
2. Psycholinguistics: analysis of words
3. Phonics and phonemics
4. Individualized reading procedures
5. Linguistic structure of English
6. Grammar of English language
7. Study-type reading
8. Paragraph organization
9. Programmed procedure
10. Initial teaching alphabet

Added Comments

Many comments were added, indicating

personal opinion based on personal experiences with regard to most essential qualifications of reading specialists and their functions. Some of these echoed points already included in the questionnaire. However, they were given individual connotations and special emphasis in the written statements. Some of these reflected needs for specific situations or for particular organizations of the reading program.

Reading specialists have learned to appreciate teaching experiences of all kinds, or feel the lack of such experiences. They wanted "more direct contact with children in the regular classroom situation"; "experience teaching at various grade levels"; a reading specialist should be "a master teacher first and foremost"; "supervised successful classroom experience"; "school experience working with individuals and small groups." Others listed more and better laboratory teaching experiences. Comments like the following were included: "more observation in classroom during methods classes"; "more observation and participation in the reading program"; "full year of internship"; "supervised practice in remedial reading." Requests of this type continued in the demand for effective inservice training in statements like the following: "conferences and planning sessions with classroom teachers"; "inservice education--teaching concept of why and how a child reads"; "attending reading conferences"; "providing instructional materials center"; "hold workshops for teachers"; "hold seminars on various approaches, educational changes and diagnostic teaching"; "demonstration of materials."

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A common concern of the reading specialists was a better understanding of the students with whom they work. Among statements listed were: need "a course in physiology and ontogeny of human development"; "a better knowledge of exceptional children"; "select teachers who are sensitive to the feelings of children."

In addition to understanding the child with whom the reading specialist works, he recognized the need for understanding and being able to work with parents and the public. The specialists saw the need for "instruction in public relations"; "a charm course for all teachers"; "set up classes for parents to secure better understanding and cooperation (among) teachers, parents, and children"; "enlighten public about modern techniques."

Teachers recognized their own ineffectiveness and urged better opportunities for initial preparation of a reading specialist. They felt a need for "complete reading laboratory with modern supplies"; "a media center with automated machines, tape recorders, controlled readers, reading kits, audio-visual materials"; "in depth study of many reading approaches"; "a good basic course in word analysis skills"; "more experience in testing and diagnosing"; required "language arts course for all secondary teachers"; "course in linguistics"; "course in phonetics and phonemics"; "less theory and more practice"; "difference and comparison of reading tests"; "better acquaintance with current literature and research"; "speech course"; "better undergraduate courses in reading"; "better undergraduate

courses in children's literature"; "more clinical study"; "more emphasis on perceptual problems"; "greater emphasis on humanities instead of academic proficiencies." The specialists asked the colleges to "weed out those who do not have enthusiastic personalities." They assumed the responsibility "to enlist persons who can qualify for reading specialists."

In reviewing these and other statements, it became evident that the reading specialists were not entirely satisfied with their own preparation by the colleges, the situations in the schools, or their relationship with students and parents. They placed emphasis on understanding the child as indicated in the previous section on academic course work. Psychology, re: learning to read was considered to be the most essential knowledge for reading specialists. However, almost in direct contradiction to the evaluation of courses, an area concerned with knowledge of the English language and skills involved in learning it was given high priority. Structural analysis of words was rated second highest, followed by phonics and phonemics rated third, linguistic structure of the English language fifth, grammar of English language sixth, study-type reading seventh, and paragraph organization eighth. However, the specialists didn't rate this type of course work essential (Courses in phonetics and phonemics were rated 10.5, linguistics 17.5, and English Composition 23.5 in a list of 24 types of courses.).

Conclusions

Among the problems and questions raised in the study concerning the preparation of reading specialists are:

a. Why was literature for children and youth rated below the mean? Is this a reflection of the course content or the way the course is generally taught?
b. Why were statistics and methods of educational research rated near the bottom of the list? Are the institutions preparing reading specialists doing so little in this area that their products are neglecting it almost completely? Should this fact be considered a red flag in planning future reading specialists' programs?
c. Should a primary knowledge of linguistics be included in the preparation of reading specialists? (According to the questionnaire, this area was entirely neglected.)
d. Since there is always a limitation with respect to number of courses that can be included in a program, are there some courses which are presently required but rated very low that could be exchanged for courses rated comparatively high?

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THE CRITIC AS READER: NOTES ON ONE KIND OF COMPREHENSION

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Interest in critical comprehension as an important aspect of training in developmental reading has become very strong in the past few years. This recent emphasis has not only appeared in actual teaching but also in reading workbooks, articles in professional magazines, and collections of such articles (1,4,5,6). A general assumption appears to be that we are not only inescapably separate persons as readers but also inescapably critics as readers too. Our fate is evidently that of relatively subjective comprehension--to be escaped only by an intermittent discipline of the will.

The loneliness of each critic as reader, however, is reduced by his interaction with a writer, with the source of the content the reader subjectively perceives. In the words of some recent anthologists:

> Critical reading is defined... as an analytical evaluative type of reading in which the reader analyzes and judges both the content of the selection and the effectiveness with which it is stated (6, p. 442).

But this might best be described as interaction at its highest form; one is not always equal to so much.

The Experience Ratio

We bring our separate existences to our

reading--and the ratio of what has been experienced to what is read of course must differ greatly from critic to critic. Knowledge--what a man has done, learned, read--and what he has learned about learning--this knowledge must help make a critic good, kind, different or bad. And we as critics can of course never know too much.

Rabelais says in his Prologue:

> Go, hang yourselves, critics,
> You shall never want rope enough.

But that is a risk we must be happy to embrace, either in the strict sense of Rabelais' words or more broadly.

The Meaning of Names

These meanings are a part of our knowledge--nevertheless we need to:

1. Remember that the names themselves pass out of and into use. Count the changes in kinds of names or nouns in the first edition of the New International Dictionary in the second edition and in the third. These are quiet yet influential revolutions. Thus the second edition is coming to be considered best for students of literature, the third for students of science and so on. Or take our individual experiences with the currency of "inner city," "nuclear war," "space walk," or in reading circles, "disadvantaged," "decoding," "multimedia." What will next week bring as terms around which our thoughts circle? Or tomorrow morning? What can we experience after "yippy"?

2. Remember that names of things may be colorless or colored--neutral as "protagonist" is neutral or without neutrality as "heroine" is without.

3. Remember that names take meanings from contexts of place and time. Compare "American" in Iowa and North Vietnam in our time.

The Meanings of the Instruments

We communicate our knowledge of names--or we try to--through words which may be called the instruments--articles, conjunctions and prepositions.

The point here to be made about these is a very simple one: they differ in their meanings. "A" is different in meaning from "the"; "in" is not the same as "into", or "within"; "while" doesn't really mean what "although" means. Yet students do not seem to learn this. A recently lauded dissertation on this subject emphasizes that these "semantic links basic to the understanding of meaning" are not understood early enough by our children and that this is demonstrably detrimental to the right achievements in comprehension.

Style as Meaning

In nearly all writing of real excellence, style is used as part of the meaning communicated. In the historical writing of Gibbon, the satire of Swift, the social criticism of Arnold--<u>the content or meaning of the whole</u> is partly the expression of the matter; to ignore or underestimate the styles of these prose masters is to miss their meanings

in part. And the same is to be said for the readers of Thackeray's Vanity Fair (where style is itself a kind of commentary), Conrad's The Secret Agent (where the irony of style supports the irony of content), or Faulkner's The Bear (where the convolutions or length of statement condense the history of the slave-ridden South). The significance of style as meaning also appears in the non-fiction of our time--in such works as Rachel Carson's poetic work of popular science, The Sea Around Us, Antoine de Saint-Exupery's Wind, Sand and Stars, C.S. Lewis' delightful The Screwtape Letters, and of course the addresses of Winston Churchill. But this relationship of content and style does not necessarily occur only on the high levels of literature: Timestyle and the exuberant talk of Julia Child on television demonstrate that sufficiently.

Positions of the Critical Mind

We have briefly noted some aspects of the general conveyances of knowledge through language. We may now go on to distinguish knowledge as appearing to us in different kinds of whole works, as imaginative works, rhetorical works, and practical works--and ask ourselves how these differ from one another.

An imaginative work--a lyric poem, perhaps, such as Shelley's "To a Skylark"--acts as a means which creates an effect upon the emotions as an end in itself. A rhetorical work such as "The Gettysburg Address"--is a means which creates an effect upon the emotions as a secondary means to an end outside the emotions. A practical work--a recipe for baking a

cake--is not concerned with the emotions at all; it is merely instructive toward some objective and, usually a material one (a chocolate cake, for instance).

Thus we must alter our critical perspective and the kinds of knowledge applied--as we move from one kind of work to another.

In the reading of imaginative works we first identify the genre or style, then we look for whatever characteristics are good in good work of that kind, then we look for unusually good or unusually bad qualities, and perhaps such aspects as particular treatments of point of view, or meter, or symbol. As a critic reading, we operate in a world of such labels as "allusion", "conflict", "imagery", "motivation", "poetic license", "tone", and the like. The appropriate knowledge is our knowledge of the world, this world--in our time, that of "the heirs of all the ages," a largely "given" world in terms of literary reputations and opinions well founded before our own actions.

In our reading of rhetorical works, our approach must be quite different. Here we will need to consider:

1. Intent

The kind of work obviously intended. The kind of writer concerned (suppose--if you can--that General Grant had written "The Gettysburg Address").

2. Order

The kind of ordering of the whole (in

terms of expository, argumentative, descriptive, or narrative types).
The separate ordering of the parts.

3. Emphasis

The use of titles and subtitles.
The use of style generally (as seen in kinds of sentence patterns, balanced, periodic, and the like).
The use of climaxes.

4. Coherence

Consistent development of thought.
Overall integration and impact.

5. Use of subject matter

Adequacy or magnitude of material.
Reliability of material.

6. Relation to audience

Intellectual difficulty.
Emotional quality.
Time and place.

Why is "The Gettysburg Address" a rhetorical masterpiece, despite the enormous wear-and-tear upon it, some of it not at all respectful? The answer can be easily given in terms of the above requisites.

In our reading of practical works our approach is always of a material kind--the actual performance being the only needed test. (Did the cake fall, though the cook was very skillful?)

Merrill M. May

The Critic's Good and Bad Relations

We can assume that the reader as critic in the fundamental act of interpreting printed matter correctly will wish to do well, that his relations with print will be the correct ones. What are some possible errors? They are of course as the sands of the sea. But let us mention a few common ones (2).

1. Irrelevancy--assigning wrong meanings to words and passages.

2. Inadequate support from the text for conclusions drawn.

3. An excess of subjectivity--routine reliance upon "But that's what it means to me" and similar mulish comments.

4. Plain, unvarnished ignorance--especially of technical terms and of kinds of compositions.

What does the critical reader need as insurance against error? Obviously, considerable knowledge and many skills.

Kinds of knowledge:

1. An extensive vocabulary and familiarity with how people alter the uses of words through time (as set forth in such works as Greenough and Kittredge's Words and Their Ways in English Speech).

2. Familiarity with literary and historical genres and devices (for example, irony, metaphor, allusion, symbol).

3. Logical fallacies and devices of propaganda such as card-stacking, name-calling, the plain folks device and others).

Kinds of skills:

1. Ability to distinguish kinds of meanings.

General or overall meanings--both as representative of a type and of a particular work.

Specific meanings of component parts of a work.

Emotive meanings--including appeals that are fair or above the board and those that are unfair or meant to be imperceptibly communicated.

2. Ability to use context clues such as

Definition
Comparison
Synonyms
Transitions
Familiar expressions (provincialisms, slang, etc.)
Narrative passages recalling the reader's experiences
The obvious signals of organization such as titles, subtitles, numbers, summaries

3. An ability to follow the movement of thought--to understand kinds of development in either literary or rhetorical works.

4. Ability to work on three levels of comprehension.

Literal
Critical
Creative

Literal comprehension we may understand to be correct acceptance of the given text. Critical comprehension is the further stage of examination or judgment. Creative comprehension is a degree of participation in or extension of the author's experience (3).

Understanding and acceptance, examination and judgment, participation--these can be consciously separated in theory but not always in practice. We must note that, because our comprehension is inescapably subjective, the literal level is almost always colored with elements of criticism. In addition, although the critical level is usually a prerequisite to the creative level, this is not always true. A master of English prose--Sir Thomas Browne, Carlyle, Arnold, Faulkner, or E.B. White--may numb the critical interest by a kind of enchantment. In these and in any instance of creative reading the reader becomes to some extent an unconscious creator in a sort of "joining hands" with the author. The reader may in addition proceed from this point to a further creation of his own.

5. Finally--and most important--awareness, an excellence of perception and connection. This is necessarily dependent upon the reader's intelligence and experience and also upon his present condition, physical and mental.

Merrill M. May

The Chief Concern

Our basic problem, as set down before, is the acquisition of correct knowledge through the reading of a printed text. This is composed of:

1. The recognition of words in certain orders.

2. The consequent making of inferences.

3. The following forming of premises or judgment.

The Example of Prospero

The critic as reader, we have said, brings his own knowledge and skills to the acquisition of more knowledge. If he is to be the best kind of reader--as we surely would like him to be--he must be able to measure his experience through:

Awareness of the meanings of words.

Awareness of the movement of thought through the relations of words.

Awareness of the meaning of the whole work.

At no point--or so let us trust--will he be tempted to echo the words of Shakespeare's Prospero when he says, with a certain relief,

> And, deeper than did ever plummet sound,
> I'll drown my book.

No, we must attempt to avoid the example

of Prospero. Our reader as critic may well wish to drown some books (and no doubt a suitable end for them) but he will much more often continue with the magic of words, secure in his triple awareness, interested by his own self-interruptions, and content to a degree with the subjectivity of his critical comprehension.

But he may worry--and he should worry--about his ability to ask the right questions.

Merrill M. May

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READING FOR KNOWLEDGE AND READING FOR PERSONAL DEVELOPMENT: A CONTRADICTION

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My concern today is to inquire whether we are teaching reading adequately.

How adequate our teaching is depends to some extent on what we teach when we teach reading. So I should like to begin today by asking what kind of reading we have been teaching at the college level.

I believe when this question is fairly explored we shall see that we have been teaching almost exclusively what may be called Reading for Knowledge. I believe that we have been emphasizing one kind of reading to the near exclusion of another kind which I shall call Reading for Personal Discovery and Development. I believe that this imbalance at the college level goes back to the late 1920's when the current type of college reading programs were more or less designed. I believe that the preference of reading for knowledge over personal development may have been justified then; to continue an exclusive emphasis on knowledge gathering may be relatively pointless if not positively dangerous now; and that it is time to give thought and effort to redressing the balance between the two. Such a change, in my opinion, may work to relieve some of the dissatisfaction and unrest to be found in our current universities among students as well as faculty.

But it is time to define terminology.

Richard Stevens

What do I mean by this antithetical set of terms reading for knowledge and reading for personal development?

Reading for Knowledge

By reading for knowledge I mean the kind of reading students do in order to pass typical textbook courses as offered by typical college departments. I have in mind the kind of reading done in courses in psychology, in chemistry, in thermodynamics, and in history. I have in mind the kind of reading students do to get their grades. I have in mind the kind of reading students labor over, and have difficulty concentrating on and complain about because, in their terms, the material has little relevance to their life experience.

The method of reading for knowledge is most certainly known by all reading teachers. The method requires the student to find the most important ideas and facts as defined by the writer. Once the student has these located, the method requires him to reread in order to commit the facts and ideas into memory. Finally the method requires the student to review the material for retention at a later date when he will be tested. I should be clear that reading for knowledge requires students to read while keeping themselves--their hopes, goals, needs, and concerns out of the learning situation. In sum, reading for knowledge is the approach to reading demanded by the strict, objective concerns of the departmental disciplines.

In isolating this kind of relatively impersonal reading, and perhaps describing

it too harshly, I do not mean to suggest that reading for knowledge is without value. I realize that as long as the world is complex with detail, students will have to struggle to master the detail if they are to master the world; that if men want health and comfort, and the pleasures consequent to technology, students will have to master the disciplines that order the world to produce these benefits. No, I am not at all interested in suggesting that we must get rid of teaching reading for knowledge.

Rather I would like to suggest that our colleges should assign this kind of reading in balance with another kind of reading which I call reading for personal discovery and self development. Allow me now to define what this kind of reading is.

Reading for Personal Discovery and Development

Let me begin by saying that reading for personal discovery and self development is not the kind of reading we do to learn something, rather it is the reading we do to become someone. The function of this kind of reading is not to mold our minds to the shape of an objective discipline, but to let our personalities range freely over diverse subjects in order to provide possibilities for us to identify with. In reading for knowledge the text is master; in reading for self development the reader is master--he is encouraged to read--even misread--in any fashion he pleases so long as the text helps him to clarify, enlarge and fulfill himself. Reading for self development, as you can see, is

highly personal; it is more an art than science. If it is a discipline at all it is one that grows out of the person rather than some externally imposed regimen. I have said that when we read for knowledge we learn something while leaving ourselves out of it. In reading for personal development our primary purpose is to put ourselves into the act of reading; in other words, our primary purpose is self-enhancement. We do such reading to discover new possibilities for ourselves; to find out who we are, what we think and what we value. In sum--we read for personal development when we read, not to recite, but to become. We read to imagine new possibilities, to try on new experiences, to discover and extend ourselves.

Having defined my terms, I would like to turn very briefly to the matter of the increasing depersonalization of the college scene which the distinction between reading for knowledge and reading for personal development is related to and illumines. Now the reason for my concern with this distinction between reading for knowledge and reading for self development is that the emphasis of the knowledge over self development is characteristic of many phases of our present approach to university education. Consider the mass lecture courses, the tape-access approach to education, the impersonal textbooks; the decrease in humanities courses and the increasingly professional (as opposed to personal) approach to what humanities courses are taught, the replacement of the liberal courses by professional social sciences, and finally the breakdown of interpersonal relations

between faculty and administration and students on campuses ever larger and more anonymous. The reason then that I am so concerned about the replacement of reading for personal development in universities is that it threatens what is in my opinion the ultimate aim of education--the disciplined self. Modern education in my opinion is emphasizing only the discipline, the professional, in education. Somehow it has lost sight of the selves that have traditionally been the creative forces of societies.

Now if this drift of modern education is granted, the question arises, what has the field of reading been doing while colleges have grown increasingly impersonal both in intellectual and social matters? How have the reading teachers responded to the increasing dehumanization of the university enterprise? What kinds of reading have reading programs been teaching in our colleges? And how have reading teachers felt about their role?

In response to the first question regarding dehumanization, I would have to say that the field of reading has kept pace with the college, step for step, in emphasizing education for knowledge as opposed to education for personal development. In fact, if one considers what materials reading teachers teach with; considers what reading course objectives they set; examines what the reading tests test; weighs what the professional and classroom reading books emphasize--he will be forced to conclude that there is generally but one kind of reading taught in college reading

programs--reading for specialized knowledge.

Consider SQ3R, the study method taught in every reading program in the country. What is it but a method of acquiring, ordering, and preserving the important knowledge in a textbook? But SQ3R is only one of many devices college reading teachers use, which characterize college reading instruction generally as recitation training. The workbooks that abound in reading programs are also devices that train recitation. What do they accomplish beyond forcing the student to remember isolated tidbits as a result of his reading? Lessons which teach outlining and summarizing in college, however valuable, also perform a similar kind of recitative function. Their major contribution is showing the freshmen how to order, select, and preserve information. The same is true of the objective tests that reading courses use to measure progress: inevitably they are almost exclusively concerned with the knowledge product of reading. Although they may divide the knowledge product into a variety of categories: (main ideas, details, integration of details, drawing conclusions, etc.) the reading response such tests measure remains one of gathering knowledge. What about rate or speed training? Even this is taught under the guise of helping students to collect more knowledge. The universal slogan is "read faster to learn more." What about critical reading? Don't reading teachers teach critical reading, and isn't critical reading more than gathering knowledge? In my book the kind of critical reading that depends on a five minute question-

answer session in which students respond to teacher generated questions is little more than recitation and is a far cry from reading for personal development.

It should be clear that the major, if not entire, concern in present day college reading instruction is directed to the multiplication of and preservation of the input to the mind of the student. Now the multiplication of input isn't a bad idea in and of itself. Who can object to students possessing more information? We may ask what student was ever hurt by a broad background? This question has an answer: the student is hurt who never does anything to or with his background beyond forgetting it after the final exam. The student is hurt who graduates never having been involved with human problems in general and his own problems in particular. The student is hurt who has been denied the insight that human life can be rational and meaningful and self fulfilling.

Here is precisely the problem we should be concerned with: college and college reading programs in my opinion do not devote enough effort to the important activity of encouraging students to make a lively personal response to their reading. How many reading courses are offered in which the student is taught to respond in a personal way to material that is geared to genuine reflection? How often are students stimulated to develop a personal world view or to bring their personal thought to the light of day--to the appreciation and criticism of their peers and mentors?

Listening to all this you might well

react by feeling these are problems of the college as a whole, not the reading teacher. Let the college change the curriculum, let the college create educated persons; after all reading people are only the tail and not the dog. Before closing, I would like to suggest some things the reading instructor can do to improve personal reading within the context of the college. I would like to discuss briefly three areas in which change is possible and in my opinion desirable.

1. The college reading person should increase his understanding of the differences between reading for knowledge and reading for personal development. The most important idea here is that reading can lead to self development--knowing who we are, what we value, and what we think, and that this objective is at least as important as knowing what a lot of writers on a lot of subjects on a lot of reading lists think.

In fact knowing what others think may be important to us only when we know how their thought relates to our own. In any case reading teachers should learn how different reading for knowledge and reading for self discovery are, and the value and place of each in reading education.

2. Once they know the difference, college reading teachers ought certainly to continue teaching reading for the acquisition of knowledge. But they ought to teach even that in a fashion that encourages students to respond to knowledge in a vital personal way. In the reading lab the instructor should help

students to know and experience reading for personal discovery as well as reading for knowledge; the teacher should try to communicate how reading can enrich personal living and can stimulate a vital intellectual life. As my wife says, we should show students how to put some "soul" in their reading. In every college program there ought to be some reading for discussion and some discussion of reading that gets away from and goes beyond the mere accumulation of impersonal knowledge. Students and teacher ought to spend some time responding to the issues they read about in a way that the teacher isn't right and the students are not wrong; and in which they both are exposing and sharing their ideas and feelings. Such an exchange of experience in reading is the key to influencing a student to become a good person as well as a good student. Incidentally, doing this may improve reading teacher morale--I have in mind the perennial shame reading teachers feel over having degenerated into little more than clock watchers, rate keepers, chart makers, test graders, percentage calculators, and machine monitors.

3. A third area of enterprise for a reading teacher is to make some effort to represent personal reading in the councils of his college. In all too many schools the forces in favor of humanistic education are directly in need of allies. Often the dean of a college will have arrayed against him almost the entire staff of the various departments who clamor insistently for more space and time to increase professionalism in the college at the expense of the humanities. Any help that the reading teacher can

give in the councils of the university is bound to be of value. Recently I have taken this advice seriously for myself. At our university I currently teach one section of the great books discussion course which juniors in arts and letters and seniors in the college of engineering take. To illustrate what I mean by trying to influence university policy, I have managed to get on the advisory council of the collegiate seminar; I have managed to become a part of the staff that trains green seminar leaders; and finally with another member of the department I have written a book that tries to clarify for the seminar the difference between reading for knowledge and reading for personal discovery. In telling you of these adventures I do not mean to pretend that I have personally brought about the Brave New World of Personal Reading and Education. I meant no more than to tell you of possibilities there are for helping colleges as well as college students to a finer perception of what personal reading is about.

AFFECTING CHANGE IN COLLEGE INSTRUCTION AND INSTRUCTORS

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Casual reading of the annual "Reviews of Research in College-Adult Reading" (Bliesmer, 1967-1969) or of Summers' (1969) recent review of doctoral dissertations would reveal that college reading and study skills programs are becoming larger and more sophisticated every year. Pre- and post-test scores are becoming alarmingly more significant under all kinds of covariant and bivariant measures. Grade point averages of "after-skills course work" are reaching all time highs, as are word per minute scores. The reader will even find that through some client-centered therapy sessions, along with "skill-builder" drills, the reading-study skills students are becoming complete extroverts, or is it introverts?

If the reader continues his survey of recent literature on college reading and study programs, he will find numerous papers reporting on the latest applications of Skinnerian or behavior psychology to skills development. And if he can find the right journal, he might find a report of a college reading and study course that was taught on television, using time compressed speech, presented tachistoscopically with exercises from a box of programmed cloze exercises and purported to develop cross-patterning and Reading Dynamic hand movements. Yes, even if some of the above statements are on the facetious side, current literature (Miller, 1957

& 1959; Colvin, 1962; Lowe, 1963; Wark, 1965; Bliesmer, 1967, 1968 & 1969; and Summers, 1969) has supported the claims that college reading and study skills instruction is important and is successful.

The issue that this paper proposes is not that we have failed, but that we are not succeeding enough. College skills programs are successful in quantitative results, but not necessarily in qualitative results.

Qualitative success, as this author views it, is affecting a behavioral change in our students and in the environments that will reinforce this change before it is extinguished. Granted, if we are behaviorists, we have worked from the theory that if a new behavior is developed, in some skill area, we should provide enough primary and secondary reinforcement that will assure successful approximation.

Is Change Needed?

The question that goes unanswered is "Do the products of reading and study courses successfully approximate their skills in content courses?" Or further, "Are the graduates of reading and study courses able to gather facts, integrate and synthesize ideas no matter what instructor or textbook is thrust upon them?"

Research on behavioral practices or on transfer have not given us the answers to these questions. It is reasonable to suggest, however, that students are not able to utilize their skills in all environments, and may even have some extinction of their skill behavior,

if the instruction or instructor in a particular class does not reward or reinforce the learned behavior.

Thus, our problem: In order to provide for quantitative and qualitative success there must be a change in approach. And it is a second issue of this paper that that change must come, basically, in college instruction and instructors. (It could be suggested that any changes should be directed to college skills instruction and instructors. Perhaps another liberal heretic could attack that argument at a future date.)

What Is To Be Changed?

Since the emphasis of the thesis is for change, a brief discussion of what is to be changed must preclude how the change can be affected.

Heilman (1963) suggested that there are three "roadblocks" to interaction and cooperation between reading programs and instructors of established curricula at the college level. While more specific items could be listed, these will serve as a few of the "what is to be changed." The first problem is the lack of understanding about the complicated developmental process that is reading. While the college instructor is the first one to say "college students do not read with enough efficiency to meet the demands of college courses," they are perhaps the last to understand why.

Problem number two is related to this limited background in the psychology and pedagogy of reading. Many faculty members view student difficulty in organizing the materials of a course or

poor textbook reading skills as evidence of the lack of intellectual ability. And if a student seeks instruction in reading and study skills it will be a futile attempt to "salvage the academically inept."

A third problem cited by Heilman (1963) is that faculty members associate reading and study improvement courses with "speed reading" programs, and not as balanced programs of skill "efficiency." We all know why this misconception has developed. Advertisements are flooding the mails with claims of fantastic speeds and even our own courses are using what we call "motivational" devices, but what students and faculty call "speed reading machines."

We could go on with other problems of articulation between the faculty and the reading program. But now let's look at some methods of change. Let's explore change from the view of providing for student success, quantitatively and qualitatively.

How To Affect Change

Succinctly, this change can be affected by the triad of information, correlation, and integration.

Information. College reading and study skills instructors are certainly not trained to be public relations specialists. We have had on the job training, however. Students, who are "referred to" the reading center by admission offices, counselors and deans have a very jaundiced set about this referral. They are convinced that the reading and study center is either the

"last desk" before the great exodus or a definite indication that they are brain damaged. Fortunately, college skills personnel have discovered many ways to handle this jaundiced and prejudiced student view.

Since college professors are a bit more sophisticated than their students, we have to use a slightly altered approach. But, basically, we can change instructors' misconceptions as we do students' misconceptions. The following are a few information techniques:

1. Have a coffee pot in the reading center. When faculty members call about a student, invite them for a coffee clatch to discuss the case. Invite faculty members to use the center and the coffee pot for after hours committee and staff meetings. Much exposure of the center and the staff in operation, will lead to questions about what is being done in the center. Once you have a captive and curious audience, explain such things as, learning to read is a developmental process, or that new reading material may require new skills, and so on.

2. Write frequent informational articles. Alumni magazines and student papers, etc. are always anxious to publish faculty material. Present your case as often as time permits with articles about speed reading vs. flexible and efficient reading or how we learn a vocabulary word.

3. Publish data which indicates the value of student's participation in reading and study courses. If faculty members become accustomed to receiving

these reports, questions may arise that will lead to explanations of how the faculty member may assure the student success. That is, how the faculty member may affect transfer.

4. Offer a speed reading course for the faculty. While this may seem to further reinforce their misconception of the role of the reading and study center, it will give you an opportunity to display your wares. Again, a captive audience may see how to teach organizational skills, or how to give a reading assignment.

5. At faculty and curriculum meetings express your concerns about faculty attitudes toward reading and study programs, their views of "poor readers," etc.

Many colleges are using the techniques of the National Training Laboratories in developing curriculum changes. Try to become a member of these T-groups or sensitivity sessions. Perhaps the format of "encounter" will work where other techniques have not.

Heilman (1963) suggests some additional methods that can affect change by information:

1. Continue to explain to colleagues that learning to read is developmental, that critical reading is not learned once and for all, or at a given grade level.

2. If your program is a balanced one, stress this fact to your colleagues At the same time, cite the very valid justifications for adults developing

flexibility in rate and skimming ability.

3. Discuss the college reading program with faculty members and invite them to attend the reading course.

4. As opportunities present themselves, write informational rather than inspirational articles for the alumni magazine, student paper, etc.

5. Explain reading program goals and procedures to groups such as counselors, freshmen advisors, instructors teaching beginning English courses. Invite these individuals to call the reading service to the attention of their students at the beginning of each term. Provide each person, who indicates willingness to cooperate, with a one or two sentence announcement to read in class and a few one page brochures to hand out to any interested student.

6. If your program is not primarily remedial, or if it is not designed primarily for the lowest 10% of students, be sure these facts are stressed over the campus.

7. Never offer the program to more students than the staff and facilities warrant. Impress on those turned away that this decision was necessary. Students who want to get into a good reading improvement course are much better assets to the program than large numbers of students who were offered a poor, disorganized, inadequate type of training.

8. As soon as possible, present some data which indicates the values which accrue from student's experience in

participating in the reading improvement course. Do not stress gains in comprehension which are, in essence, traceable to an increase in items attempted on the post-test. Do not equate post-test gains in rate with permanent habit changes.

9. Be sure your program merits student and faculty support; then ask these groups for support.

Correlation. The second method of affecting change is a little more difficult to achieve, but certainly worthwhile. Correlation is the offering of a reading and study program that is organized around a content course, but is scheduled at a different time.

Marani and Maxwell (1968) reported on a reading and study skills program for medical laboratory assistants that could be a model for correlation programs. It consisted of ten hours of reading and study instruction per week running concurrently with the ten weeks of the formal medical assistant instruction program.

Skills instructors attended some of the content courses and a weekly "bull session." Reading and study instruction, therefore, centered around the application of skills to the particular content, with materials from the m.a. courses.

While the results were not completely satisfactory, there was significant improvement in "residual gain," (Rankin, 1965), which is more of the kind of quality we are looking for in reading-study programs.

A similar correlation program was reported by Deffenbaugh (1969). A group of college level courses were offered to foreman trainees in an intensified summer session. Each trainee attended the same math and economics course. A daily study seminar was scheduled to teach the learning skills necessary. Instruction was based on the context of the economics course. Miss Deffenbaugh attended many of the economics lectures and after determining the style and mode of presentation, taught the study skills accordingly.

The correlated study skills course offers many advantages:

1. The students can actually see the application of skills, a definite contiguous learning situation.

2. There is frequent communication between the content instructor and the skills instructor.

3. Course grades can be a good indicator of reading-study instruction effectiveness.

Integration. The third method of affecting change is perhaps the most difficult to initiate. This approach is a total combination of reading and study skill instruction with the content course.

The literature reports much in the integration method. Shaw (1961) called for integrating reading development as "a requisite part of every student's regular education." He further suggested that this integration should be with English, group counseling, or

some lower freshman course depending upon the "characteristics of the institution."

Heard (1965) described an "effective reading class for law students." While the course was a "success" in terms of reading test improvement, favorable student evaluations, and suggestions that integration had occurred, there was little evidence of total integration and efficiency in law as a result of the reading program.

A pre-experiment report was made by Schleich and Rauch (1968) that describes a combination reading improvement and western civilization course. While the results are not reported, the specific approaches serve as a basis for establishing an integrated program:

1. A pre-analysis of the difficulties college students encounter in the experimental course cooperatively with the course instructor(s).

2. A pre- and post-test of reading study skills along with an evaluation of the course grades.

3. Instruction in reading and study skills using the materials of the content course for instruction (learning principles of organization, feedback and contiguity).

4. Grades assigned for a reading course and the content course.

5. Content course instructors attend the reading-study parts of the class and skills instructors attend the

content sections.

Kazmierski and Fye (1968) conducted a similar integrated course at Lorain County Community College in the spring of 1968.

A worried philosophy instructor came to the reading center for a quick cup of coffee one wintry afternoon. The discussion centered around the problems many of his students had with the course examinations and other study situations. This reporter quickly took advantage of the situation and suggested a "team-teaching" situation in the next Ethics course. While the professor was not fully aware of the approach the course would take, he desperately agreed with an eye to the advantage of less work.

The format consisted of the following:

1. Pre- and post-testing with a general reading survey, a study skills survey and a test of critical thinking.

2. Lectures were regularly presented. Periodically the class would be shortened to techniques of notemaking and "model" comparisons could be made.

3. Reading assignments in the text-book of readings were made by the skills instructor, who treated the material in a Directed-Reading-Activity method.

4. Prior to course examinations, skills instruction was centered around organizing the particular content for study. The students were taught "key words" for essay exams and the philosophy instructor "graded" on content and on how well they followed the "key-word"

organizers.

5. The research or term paper was assigned after the skills instructor taught that area of study skills.

The results were highly significant in all areas measured objectively and subjectively. Reading and study habits scores improved as well as critical thinking test scores. Comparisons were made to other sections and were significant in grade average, critical thinking, and student response to the experiment. There was no significant comparison in reading test-retest scores with other classes.

A very significant result was the change in the Ethics instructor and his instruction. Many times, during the following semester, he returned to the reading center, asking for such things as "Where's that list of key-words in essay exams?" or "How does that SQ3R go again?"

Summary

Professional literature has given sufficient evidence that college reading-study programs are successful, if viewed quantitatively. This paper has suggested that in order to achieve qualitative results there must be a change in college instruction and instructors.

If the skills program is to be truly effective, there must be provisions for transfer, contiguity and feedback in content courses. College instructors must understand that the reading process is not a unitary skill that can be applied to all; that weakness in skill

application is not evidence of poor ability; and that teaching a good course involves the same organizational principles as teaching a good reading lesson.

It was proposed that to affect this change, the skills instructors should disseminate information in a continuous public relations venture. He should also make provisions for correlated and integrated courses that foster cooperation and communication between the reading-study program and the classroom "battlefield."

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SURVEY Q3R: THEN AND NOW

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Now there is one horrible thing about people who reminisce -- they often are not well organized in talking. However, forgive me for I trust part of this will be of interest.

My early work goes back to the time of Miles Tinker and Dean Carl Seashore in the early 1930's. When I first went to the State University of Iowa in 1929 to start graduate work I was assigned to Carl Seashore as an advisor. Since he was Dean of the Graduate School as well as head of the Psychology Department, I knew he was busy. So I went in for my first thesis conference with some typical experimental topics in mind which I could suggest. He listened appreciatively but said, "Since I've appointed you as a graduate assistant to set up a Reading Clinic for college students, you ought to do research on reading." I told him that was the first I'd heard of that job assignment and that I didn't know anything about reading. He said, "That's all right, you can learn." So that is the beginning of a Reading Clinic at the University of Iowa, which was one of the first in the country, and how I got into the field of reading and How to Study.

Well, in those days, quite a bit of work had been done on eye movements, so we worked with that. My early research was on what we now call speeded reading. We started the remedial reading work

through individualized conferring, no classes. We worked on ways of learning How to Study. It was mostly remedial work on how to increase comprehension. In 1932 I finally got my doctorate and went to a teacher's college in Wisconsin. Irving Anderson, of great fame at Michigan, followed me at Iowa and built up the Reading Clinic to even a higher level.

I finally came to Ohio State in 1937. (This may seem like a long time ago to some of you, but I want to bring out that a lot had been developed way back then.) When I came to Ohio in 1937, one assignment was to get a young man to take over some of the work Dr. Pressey had developed. Frankly, when I came here, there was a highly developed How to Study program. I have the feeling now as I look over the field, then and now, that Dr. Sidney Pressey and his first wife, Luella Cole Pressey, had actually developed a rather highly organized How to Study program even in 1937. Before I came to Ohio State they had started out working with probation students in danger of being dropped. They had to take this penal assignment and receive some training. It was a non-credit program, individual counseling was used, and so on.

By the time I arrived in 1937, the program had progressed to using a laboratory approach in a room full of tables and with an instructor. The students were there five days a week; they took diagnostic tests, discussed and practiced. In fact, this whole procedure is fundamentally still used today. So for some of you who occasionally ask "Didn't you start that?", the

answer is "No, the Presseys, I think, had a real good start on it." As a matter of fact, when I came here in '37 this course had a great many sections in it and served several hundred students each quarter. It was a credit course. We'd gotten over the idea of having only probation students and we'd gotten over the idea of a non-credit course. It was being offered as a credit course for students in an attempt to improve study skills.

However, if you read back to that time (1937), you will find that this early work was still almost completely remedial. Dr. Pressey had done a great deal of work with some of his graduate students in studying the nature of errors made in writing English, for instance, and had found out that most of the errors were due to a few specific rules. Also, he'd found the same thing in handwriting, spelling, and arithmetic. There are many students who come in who can't write, who don't know words, who can't add and so on. In addition, there was a second aspect to the course. In addition to not knowing the three R's, students might have some distracting problem like indecision about what major to take or they might have a health problem. So at that time, the course was fundamentally a straight remedial course; none of this later higher-level study skills stuff. We just asked students, "Well, what's wrong with you, what didn't you learn back in elementary school?"

The Presseys had done a great deal of research by then to indicate that a remedial approach was worthwhile for

underachievers. This type of a program helped many students get off probation, helped more of them stay in school longer, more of them graduated, and so on. About 1938, an important study was done by Sherburne, under Pressey, which unfortunately was never published. (This is the history of many advisors whose students do some very good studies but do not publish.) Dr. Sherburne, who is now dean at Oregon State, did the study on a stratified sample of the whole freshman class in this particular experiment. He got the personnel office of the College of Education to agree to let him go through all of the applications of freshmen and carefully match up pairs of students with equal intelligence, from the same kind of high school, and with the same high school grades and so on. Then with connivance they were arbitrarily, just by tossing the coin, put one in each pair in the How to Study course the first quarter, and the other one they kept out. The one who went in was told "you need it," and the one who didn't go in the course, if he wanted in, was told, "the course is filled for this quarter." The interesting thing here was that this was probably a first attempt to take not only the dull students and the under-achieving students, but also the bright students and the achieving students. Sherburne showed that there was significant improvement in study skills, in grades, and in application for other courses. Further, the able students made the most gains. This did not mean that such a course was good for everybody but for any who wanted to work there could be gains. It was too bad that the study didn't get

published.

So that's fundamentally what I walked into. It was a nice program and I went to work to make my place. As any young assistant professor would do, I thought I ought to publish something, and about 1941, I wrote a book called Diagnostic and Remedial Techniques in Effective Study. It represented this early tradition of remedial work. It had a section on three R remediation and it had a section on distracting problems.

Then the war came. We'd had Sherburne's work to prove that even good students could benefit and we were discovering that even good students have lousy study habits. In school, we normally ignore the good student because, after all, he makes A's so we don't bother with him. During the war, Ohio State had a STAR unit where soldiers were temporarily located so as to be assigned to Army Specialized Training Programs. They asked us either to entertain them or give them something useful. So we undertook giving How to Study work to an outstanding group of soldiers. That is, these selected soldeirs were exceptionally bright on intelligence tests and they had A averages in high school or college. Part of the justification for giving study skills help was that after all, they were going to be carrying a 29 hour class load and this was a little heavy even for them. We gave them some tests and found that these very bright students really had quite poor study habits (Robinson, 1943). They were fundamentally self-taught dog paddlers in keeping their head above

the books, so we became worried about them.

Dr. Robert Seashore, the son of my former advisor and chairman of the department at Northwestern, was at that time working in the field of motor skills. He found that individual differences in motor skills are due not only to native aptitude and to amount of practice, but also to work method. In 1939 he published an article on the idea of higher-level motor skills and the importance of work methods. I thought it was a good article and so I went to work to design a higher level study skill. We wanted to use research findings to design a work method which even the best students wouldn't know. We took some of the research on the value of recitation, the value of using typographical cues and so on to design a higher-level study skill after Seashore's original concept and called it SQ3R. There have been other similar methods or even different ones developed and I think that they are all effective. I am not sure that mine is the best, and some, in fact, have cuter mnemonic devices to remember them by. But, in my 1946 book, Effective Study, we introduced SQ3R as a higher-level work method.

I thought it was a major contribution to the How to Study field because it obviously contrasted with the old remedial work with the probation students. We had something that any student could benefit from. We wanted to teach not only the SQ3R method but also library skills and paper writing skills, and so on. Our course since 1946 has been

oriented this way. We have volunteer enrollment, something for everybody and have emphasized the teaching of higher level study skills. We also still work on remediation and motivational problems of students.

Now, I would like to jump ahead to indicate a contrast. In 1946 "A" students didn't seem to know how to study; they were just dog paddlers who could make A's but weren't efficient. In the past year, Dr. Mary Lou Niple (1968) did a study on SQ3R. One side issue she found rather intrigues me. She was making a study of the effect of various study methods on comprehension. "Own best method of study" was one method included. She found that own best methods of study for many students today are pretty effective. So comparing our 1946 results with 1968 seems to indicate that enough How to Study work is going on in high schools now to change our early statement of complete self teaching. Not that some of these best methods might not be improved. But I have a feeling that a lot of this is being taught earlier and that our students are then coming to college much less derelict than some of our early work tended to show.

Now let me go on to some of our recent research. While I will admit that I used to do a lot of work in How to Study, I have become a little distracted recently by working in some other fields. Each year I enjoy teaching a course called the Psychology of Reading and I try to keep up on the literature but I prefer to let someone else run the How to Study course. What I'd like to do then is to refer to some of the research

that we've done here although most of it has not been published.

In the mid 1940's we had two master theses on the teaching of SQ3R and its effectiveness (McCormick, 1943; Hannah, 1946). It helped some students but not others but both studies got significant differences after training. We then moved into the area of what was causing the difficulty and what seemed to be more effective. For instance, in 1948, Dr. Greta Hultin Delong did a study at Wayne University comparing teaching approaches. She compared several methods: (1) a lecture on How to Study; (2) a lecture plus an assignment; (3) ten lectures and; (4) ten laboratory periods. She found that unless there was actual individualizing, with a chance to practice, a training program wasn't effective. So our classes meet four or five hours a week for ten weeks with an emphasis on an individualized approach.

Dr. George Wooster (1953) did a dissertation with Dr. John Kinzer on aspects of teaching SQ3R that caused particular difficulty. It's easy to read Effective Study and memorize the five steps. A student can give a good quick answer on a quiz. But there are some problems in learning to use the method. In some steps old habits get in the way. Dr. Wooster made a nice study here on particular areas of trouble.

Some further elaborations were made in the SQ3R method in the 1961 edition of Effective Study. SQ3R is usually taught so a student can recognize and remember the author's main points. If the

teacher makes a quiz over the book emphasizing the recall of these main points, the student does well. This is one aspect of study. Maybe unfortunately it is too much emphasized in college. I agree with our discussion earlier this morning that there are other kinds of reading which I think we sometimes belittle, don't teach well or ignore. These other forms of reading are too hard to teach. Well, I think they are important and this explains why I added a second chapter in the 1961 edition on how to use SQ3R on English literature, collateral readings, etc. Further, there are many kinds of reading and my own feeling is that SQ3R is only one kind.

There have been other aspects of our research that I want you to know about. We got into the study of the relationship of some of actual skills to reported skills. Study habits questionnaires were used in early How to Study work but we now know they are almost completely invalid. One, students don't know how they study and, two, they won't tell us. In one study by Randall (1943) a comparison was made between how students study when someone is using a stop watch on them and when they think a stop watch is not being used. She found the rate was only about half as fast in "untimed" study. So the usual reading test does not predict actual reading rate. Molsbergen (1954) and Hightower (1956) observed how students actually study, (1) in the library and (2) in the dormitory. For instance, we took advantage of an opportunity in which residence hall counselors can "accidentally" pop in, but actually came in on

a previously randomly assigned schedule. All she had to do was report what was going on. If the student was studying then she made mental note of study conditions, study habits, and so forth. As you might suspect, we found that students study in rather bizarre ways.

In another study Carry Jean Waters (1959) attempted to get around the social desirability aspect of items on study habits questionnaires. If the students think that what they may say is going to be used against them, they tend to answer what's good. She worked upon a forced-choice approach in study habits discrimination. This test was then factor analyzed and has promise as a different approach to study skills measurement.

Probably the one other area in which we've done quite a bit of work is in delayed comprehension or memory. All of us are bothered by the fact that reading tests only measure immediate comprehension and we have to assume that degree of immediate understanding is highly related to amount remembered forty-eight hours from then or two weeks from then. It is assumed that forgetting is a sort of wearing away or erosion. On the other hand there is fair evidence that forgetting is a dynamic process. We have had a series of studies in this area. Graham's master's thesis (1945) just explored the issue. Sherman (1952) made a rather extensive study of immediate and delayed comprehension with large groups of students in Freshman English that explored some of the relationships between immediate and delayed comprehension. James Wright (1954)

tried an intriguing idea which I think should be followed up. Usually a comprehension test only measures knowledge after reading; we never measure knowledge before reading the selection and use the difference in scores as comprehension. Now using such difference scores produced a fairly unreliable measure but it was interesting. As you might suspect the difference score is not particularly related to the end comprehension score. That is, some people may know a lot before they read but they don't know much more when they get through.

A more recent study by Dr. Mary Lou Niple (1968) was on the relation of different study methods to immediate and delayed comprehension. We were trying to use different ways of studying selections and see what effect it might have on immediate and on delayed comprehension of different kinds of questions. She found, as usual, a lot of interesting points and raised many interesting questions. She found that those who were taught the SQ3R method did better on main ideas but they did not do significantly better (nor worse) on detail. The experiment analyzed whether the taking of a pre-test affects the end test even though it may be several days or weeks later. (This was introduced because in the much quoted Spitzer study (1939) on forgetting, there is a lot of re-testing with the same items.) So in her study, she had one set in which some items were duplicated in the later tests and some were not. Even if there was several days delay, they did somewhat better on the repeated items.

Francis P. Robinson

Well, I see my time's about up. We've been working along the above lines and by the way, I'm very interested in finding out what's going on across the country because this is obviously a good field and many changes are taking place.

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Francis P. Robinson

Editor's Note

For me, the special feature of the yearbook is this paper by Professor Francis Robinson. He attended the Ohio State Meeting and spoke informally about the history of SQ3R, probably one of the most significant tools in the Study Skills Instructor's kit. The speech was taped. Professor Robinson graciously allowed us to publish his comments. They've been edited slightly and for that I take full and total responsibility. I think the words on paper reflect rather closely both the professionalism and warmth of the speaker's words on tape. I feel those of us in the audience were quite fortunate to have heard the speech and that North Central Reading Association is enhanced by the opportunity to publish it.

D.M.W.